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ALLERGY—AS IT IS AND AS IT MIGHT BE

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• *The diagnosis and treatment of allergies have been greatly facilitated by the discoveries of the past 50 years, but much of the available knowledge of the subject is not being applied. The greatest obstacle to such application is the inadequate background of allergy imparted to the students as part of their general training in medical schools; in addition there is a shortage of fully trained specialists. The effective use of diagnostic tests, of preventive measures, of specific treatment, and of such nonspecific treatments as the sympathomimetic and antihistaminic drugs depends on further progress in education and research.*

Seventeen million people in this country have allergies. This is an estimate of the number of people in the United States who suffer from one or more manifestations such as hay fever, asthma, perennial rhinitis, eczema, contact dermatitis, urticaria, allergic headache, serious drug reactions, and other allergic conditions. Many of these allergies are serious and occasion considerable economic loss and sometimes permanent disability. For example, the pulmonary cripple from asthma is many times more common than the poliomyelitis cripple. In addition, the role of allergy in infectious diseases makes it apparent that everyone may have a personal interest in this field. It is our purpose here to examine what we know about allergy, what we are doing about it, and what we might do to improve the lot of these sufferers.

Even before von Pirquet coined the term "allergie" 50 years ago, the nature of hypersensitiveness was not altogether unknown. The relationship of pollen had been definitely established about 35 years before that; specific causes of asthma had been recognized; the hereditary nature of asthma, hay fever, and related disorders had been established; and the principles of anaphylaxis were being laid down. In the 50 years since von Pirquet's historic pronouncement, allergy has become increasingly known to the profession and public and much has been learned about it. It may be added that, in spite of the fact that the early pioneering work had been of European origin—such as the discovery of pollen as the cause of hay fever by Charles Harrison Blackley of Manchester, England; the concept of allergy by Clemens von Pirquet of Vienna; the principle of specific desensitization by John Freeman of London; and the presence of an allergic antibody by Prausnitz and Küstner of Vienna—the subsequent clinical and experimental development of the field of allergy has been mainly an American accomplishment. In its scientific activity, clinical application, and general interest and information, the United States leads the world in this field.

Much is known about basic mechanisms in allergy. Many phases of the nature of antigens and antibodies are understood, and many others are under study. We are learning more and more about the chemical and immunologic characteristics of the reaginic or sensitizing antibody and the blocking or protective antibody, particularly with newer modifications of electrophoretic and other physical techniques. The role of histamine released by the antigen-antibody reaction is quite well known. Increasing knowledge is being accumulated on the allergic mechanism in the production of hemolytic anemias, other blood disturbances, and autoantigen-antibody processes. In the study of infections and collagen diseases the role of allergy has found increasing interest.

Recognition of specific causes of allergic diseases is on the increase. In the majority of cases of seasonal allergy we can determine a specific cause. First pollen was recognized as a common cause, while 20 or more years ago molds began to be accepted as an important group of allergic causes. Now insect dust is being considered as a possible important additional category of specific etiology. The role of dandruffs of animals in the causation of nonseasonal respiratory allergy is well known. House dust as a common cause of nasal and bronchial allergy is an accepted fact, even though

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we do not yet understand the origin of the antigen in it. Thus we can attribute specific allergic causes to about 60% of the cases of chronic asthma and perennial rhinitis. We appreciate also the role of specific foods as causes of allergic manifestations such as eczema, urticaria, headache, and respiratory syndromes. A host of substances causing contact dermatoses has been uncovered both in industry and in the home. The importance of allergy to drugs is being increasingly appreciated, and studies are going on to determine their mechanism. The possibility of bacteria and viruses acting as allergens is receiving increasing attention.

Diagnosis in allergy has as its objective the recognition of the syndrome as allergic, the recognition of complications, the uncovering of unrelated disease, and the establishment of a specific cause for the allergy. It is quite obvious that such a survey depends on a consideration and understanding of procedures in medical appraisal as well as a use of specialized immunologic principles and techniques. Skin tests are important, but their proper use and interpretation and the consideration of the patient as a whole are even more important. At any rate, good practice in this field can result in correct diagnoses and appraisal in a large percentage of respiratory cases and in a lesser number of other types of allergy. Incomplete or misguided ideas about the role of skin tests can increase the misdiagnoses to a considerable extent.

Specific treatment in allergy has made considerable progress in the last several decades. We know how to eliminate allergic causes in foods and inhalants. We have found nonallergenic substitutes for allergenic cosmetics, pillows, mattresses, and drugs. We have learned how to minimize exposure to air-borne allergens by plastic casings, filters, and precipitators. We have surveyed various parts of the country for their pollen and mold content and know where certain patients may obtain relief and others not. Desensitization to inhalant allergens has become a procedure increasingly accepted and has resulted in relief to hundreds of thousands of sufferers.

Nonspecific treatment has made progress also. To the sympathomimetic drugs have been added the antihistamines. These have constituted an important addition to our therapeutic armamentarium. It took several years for the general profession and public to realize that the antihistamines are not a panacea for allergy. The adrenocorticosteroids and corticotropin (ACTH) gave us additional weapons in the fight against severe allergic diseases. The tranquilizing drugs also promise to be of some help.

Inadequate Application of Progress in Knowledge of Allergy

In spite of these advances in our knowledge of allergy, only a small part of the population with allergies is receiving maximal benefits. With 17 million people having allergy and only about 1,000 specialists in the field, it is obvious that the majority must receive their care from general practitioners, internists, rhinologists, dermatologists, pediatricians, and other specialists. Many of these practitioners feel that allergy is either a theoretical or didactic problem and that its application in practice is either unnecessary or undesirable. These are the doctors who allow hay fever to develop into asthma, who watch children develop emphysema while waiting for them "to outgrow" their asthma, who treat skin allergies with topical applications only, and who give penicillin on the slightest provocation, without any thought of the possible severe allergic reactions resulting. There are those who would rather ascribe their patient's asthma to emotional influence than to go through the laborious search for an allergic cause. These are the doctors who would banish their asthmatics to isolated areas in the quest for climatic cures, instead of realizing that in many instances the "climate" may be the dog, the feather pillow, or the occupational dust.

Many other physicians have gone to the other extreme. According to their interpretation what is not known is allergic. Thus they may regard psoriasis, acne, and nervousness as allergic manifestations. They may put total faith in skin tests and may eliminate every food that gives a slight reaction, true or false, on intradermal testing. They may go to extremes in diet, eliminating refined foods and making life unnecessarily miserable for the allergy sufferers. They are frequently led to give desensitizing injections with avoidable inhalant allergens, with insect pollinated pollen, and even with foods. In short, they believe and practice a kind of allergy of the extremist. The net effect, of course, is that these practices finally result in disrespect of other practitioners and the public for the field of allergy.

Whether he leans to one direction or the other, in the majority of cases it is not the fault of the practitioner. The chance is overwhelming that as a resident in internal medicine or any other specialty he had no exposure whatever to an allergy service or guidance from one trained in allergy. If he had an opportunity to obtain such exposure he ignored it, because in his internship he also failed to get even a smattering of allergy experience and thus his interest was not aroused. This lack of facilities or interest in his intern year was in large part due to the fact that in his medical school he had had little or, in some instances, no contact with instruction in allergy. Of 70 medical schools that replied to a recent questionnaire, many gave only four or five hours of teaching in allergy, while 26 gave none.

There is also a shortage of fully trained allergy specialists who have had adequate training in internal medicine or pediatrics and who have received at least one year of special training in allergy. At this time there are only 34 approved residencies in 18 institutions, and many of the openings remain unfilled. Obviously an insufficient number of young well-trained internists or pediatricians are interested in specialization in allergy. Some of the reasons they give are that (1) allergy is to narrow a field; (2) its clinical application and results are inadequate; (3) it does not offer a challenge; and (4) it is not treated with proper respect and seriousness in medical schools, hospitals, medical organizations, and in the eyes of many physicians. In all respects the young men are in error, except

perhaps in regard to reason 4. As to the other reasons, the thinking is based on inadequate contact with allergy during undergraduate training. As to respect of the profession for this specialty, this would be entirely adjusted if a larger number of well-trained young men would enter the field of allergy and would themselves engage in teaching, practice, and research.

But what of the practitioner who recognizes that his teaching in allergy has been inadequate? What can he do? Short, intensive courses are available in connection with the two national allergy societies, the American Academy of Allergy and the American College of Allergists, and also by the American College of Physicians. Other courses of varying duration are offered by different institutions from time to time. The meetings of the national and regional or local societies usually afford considerable stimulus to one who has been already somewhat indoctrinated.

More teaching at the undergraduate and graduate level must be done if we are to overcome the lag between available knowledge of allergy and its actual proper application in practice to the hordes of allergy sufferers. The public also needs to be educated by personal contact, lectures, magazine and newspaper articles, popular books, radio, and any other proper channels. And this job should not be left to the punsters, the sensational lay science writers, and others who know little about the subject but are willing to tell a lot. This is a job for the well-informed physician, and, if done properly and ethically, without thought of personal gain, no one should object.

Inadequacies in Our Knowledge of Allergy

If our present-day knowledge of allergy were widely applied the care of allergic patients would be tremendously improved, but we would not feel satisfied altogether with its status quo. Only by admitting imperfections in our knowledge can we lay the foundation for overcoming them. We do not know all causes of allergy. In the perennial rhinitis and asthma group we can find an allergic cause for 50 to 70%. But what about the other 30 to 50%, in many of which cases patients also have eosinophils in the sputum or nasal smear? In many cases of atopic dermatitis and in more of the urticarial dermatoses we cannot find an allergic cause. Are they allergic or do they have some other background? Why does a patient fail to react to foods and yet be clinically allergic to them? What is the explanation of the lack of skin reactivity to drugs? An understanding of this might explain some of the puzzles of unidentified allergy. There is some basis for believing that a better knowledge of bacterial and viral allergy might help to unravel some of our present mysteries. The concept of sensitization to one's own modified tissue substances needs elaboration.

Desensitization is an accepted principle, but it needs to be improved. Many physicians and patients balk at its long-term programs, its frequently incomplete results, and the inconsistent duration of its effects. Much work is needed to make such treatment simple, safe, and lasting. This may be accomplished finally by such procedures as slowly absorbing antigens or modified antigens or by separation of haptenic from complete antigens. Such and similar goals presuppose a better understanding of the nature and chemistry of antigens and their antibodies and the products of their interaction, the persistence of antigens in the body, and the inherent differences between different types of antibodies.

It would help us to know many other basic facts. How do weather factors operate to influence allergy? To what extent can emotional and other psychic factors affect such conditions as asthma and urticaria? And what is the mechanism involved? What takes place immunologically or biochemically when a person with chronic asthma becomes temporarily relieved during an acute extrarespiratory infection? And might not an isolation of such a chemical mediator be applied to therapeutic use? Granting hereditary influence, what makes some people acquire allergy at one time and others years later, when all are exposed to the same environment?

These and many other puzzles require solution to help perfect our knowledge and practice of allergy. Many of such problems are being investigated in a growing number of institutions. The difficulties encountered are twofold: finances and personnel. Financial support of research appears to be shortening the gap quicker than the personnel problem. The newly organized Institute of Allergy and Infectious Diseases of the National Institutes of Health should aid materially in this support. The American Foundation for Allergic Diseases, organized by the two national societies, is progressing in its goals. It is beginning to foster fellowships and student scholarships and educating the public. Perhaps the bigger problem is manpower. Serious research in allergy requires biochemists, immunologists, physiologists, pharmacologists, physicists, and others. It must be done by teamwork with those who have clinical experience, interest, and understanding of the research needs. There are not enough basic scientists interested in this field, but their interest is growing and such teamwork is increasing. Accomplishment will breed respect; respect will result in interest; and interest will influence devotion of scientists and young clinicians to the field, which in turn will result in good research. Thus the cycle will be completed and continue to enlarge.

Summary

Allergic manifestations are many, affect millions of people, and result in extensive economic loss and disability. In the last 50 years much progress has been made in our knowledge of allergy, which makes it possible to diagnose and treat satisfactorily a large percentage of sufferers. Perhaps the greatest obstacle to maximum benefits of the care of these millions is the inadequate background in allergy possessed by many practitioners because of the meager teaching of allergy in medical schools. Imperfections in our knowledge of allergy and its more adequate management will be remedied by the increasing trend in research and the recent participation of national organizations that aim to support it.

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RADIATION—HELPFUL OR HARMFUL?

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• *The misuse of ionizing radiations for the treatment of benign conditions is still being recommended and practiced. Textbooks continue to list indications for hazardous uses of radiation without giving critical evidence of benefit. There is evidence that neither the new nor the established practitioners are being reached by recent information about the proper use of radiation and the need of protection. Fluoroscopy in particular is often done under conditions recognized as unsafe. For the safety of the patient, the physician, the nurse or technician, and others who may be helping, the physician who uses x-rays or radium should make sure that the newer knowledge of radiology is being applied in his practice.*

In an adaptive society such as ours, we change with the times or fall behind in the race. Of all the groups in our society, the medical profession has probably had to adapt to changes in as rapid a fashion as any other group. This has been particularly true in the last 50 years. This period has seen the introduction of undreamed of diagnostic and therapeutic tools. As in all groups, some have been able to keep pace with changes and some have fallen by the wayside. All in all, the profession has made a valiant effort, and a largely successful one, to keep medical practice abreast of scientific developments. Perhaps this is an opportune time, however, to ask that some of this "progress" be reevaluated and each of us inquire of ourselves what we are doing and where we are going. We might also inquire collectively whether we are bringing the fruits of progress to each other in our respective specialties, inasmuch as the human body is no respecter of the artificial bounds delineated by the specialty boards.

There are many trite phrases that are useful, if only to remind us in which direction to look. "Familiarity breeds contempt" is one such phrase. We were all startled by the news of the consequences of the atomic bomb, but x-rays and radium, the same horse in another color, have been used in medicine and by physicians for half a century. Why is it that the physician remains in awe of the atomic bomb and radioactive fall-out, but thinks nothing of the hazards of his x-ray equipment or the radium in his desk drawer? I ask this question only rhetorically, for the answer has been given: "Familiarity breeds contempt."

So common has the use of radiation become that it is not unusual to learn of the patient who goes to the physician who has a fluoroscope in preference to the man who does not include the use of that device in his physical examination. The public has come to expect the use of the x-ray and even to demand such use. What I should like to discuss is the medical use of ionizing radiation, the position of the medical profession in the use of this medium, and the implications of such use in the practice of preventive medicine and public health.

Primer in Radiation Physics

In order to make the terms understandable, let us briefly list a few types of radiation, their symbols, and their generally accepted relative biological effect. With the effect of x-rays used as 1, the relative biological effect of alpha (α) rays is 10-20; of beta (β) rays, 1-5; of gamma (γ) rays, 1; and of neutrons (n), 1-10.

All these types of radiation are called ionizing radiations, that is, their passage through matter produces charged particles either directly or indirectly. Ionization, and possibly other effects, can cause damage to living cells, and it is for this reason that we as physicians are usually interested in ionizing radiation.

Primer in Radiation Biology

The biological effects of any of these radiations are dependent on: (1) the type of radiation and its ionization density, (2) the tissue irradiated, (3) the amount of tissue irradiated, (4) the duration of irradiation and dose per unit time, and (5) the organism irradiated. Simply stated, radiation might be described as accelerating the aging process. It can cause a shortening of the life span. It can also cause many of the degenerative changes associated with the aging processes such as carcinoma, sarcoma, and cataract formation. We have all, I am sure, seen some of the bad results of working under the fluoroscope. In the older practitioner we may see signs of radiation exposure such as dry, cracked fingernails, increased keratinization on the hands, and cutaneous malignancy. Such changes may also be signs of advancing age. The increased incidence of leukemia among physicians as opposed to the general population has been written about on many occasions [1] and attributed to radiation exposure. Though the numbers involved are small, the statistical evidence appears to be valid.

Sterility resulting from radiation is largely a folk tale. It requires more radiation to cause sterility than it does to cause death, unless the dose be localized to the reproductive organs. Thus, death will usually occur before sterility. Unhappily, this information does not appear to be known to the average medical practitioner, and the feeling often prevails that, because the power of procreation has not been impaired by 10 or 15 years of radiation exposure, no significant effects have resulted. It is not my objective to discuss the biological effects of radiation in detail. That subject has been treated at great length by those better qualified than I.[2] I do propose to discuss the use to which radiation is being put by the physician and the training he is given for his use of radiation.

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Use of Radiation by the Physician

With the exception of the use of radioisotopes for diagnostic and therapeutic purposes and the therapeutic use of radium and its daughters, the physician generally confines his use of radiation to the x-ray. The other types of radiation I have mentioned, alpha, beta, and gamma, are literally Greek to the average physician, and the neutron is used therapeutically in only a few places in this country. The x-ray is, however, used widely throughout the profession, both diagnostically and therapeutically. If one picks up a specialty textbook chosen at random and lists the uses of radiation in the specialty, a rather interesting collection of disease entities results.

For example, Curtis and Huffman [3] describe the use of radium implantation in uterine hemorrhage and in checking menstruation in healthy young women. Ormsby and Montgomery [4] list roentgen ray treatment as being of value in "keloid, tuberculosis verrucosa cutis (at times in lupus vulgaris), and forms of eczema, lichen planus, psoriasis, tinea capitis, favus, furunculosis, carbunculosis, erysipelas, granuloma pyogenicum, hidradenitis suppurativa, and other pyogenic infections, verrucae of different types, and in selected cases of pruritus vulvae et ani." Other disease entities are included as well, such as eczema and psoriasis, for which soft x-rays (grenz rays) are recommended. Casgrande and Frost [5] suggest that "x-ray therapy may be used alone or in conjunction with suprascapular nerve blocks using novocaine," for bursitis of the shoulder.

Many currently used textbooks list other nonmalignant entities for which radiation therapy is suggested. Current professional literature indicates that radiation therapy is being used fairly generally for nonmalignant disease. The increased awareness of the biological effects of radiation makes it more necessary to inquire about the effect of radiation on man. Do we have information as to the relative value of radiation versus other modalities in the treatment of nonmalignant conditions? In the treatment of malignant disease, there can be no question of even considering the delayed effects of radiation. In the treatment of nonmalignant disease, this same principle does not usually hold true, and we must then consider the voluminous clinical evidence of long-delayed effects from such treatment.[6]

Statistically valid, controlled studies, contrasting radiation therapy with other types of treatment of nonmalignant conditions or with no treatment, are either lacking or not generally known. In how many instances of radiation treatment of nonmalignant conditions is the situation after radiation therapy better than the situation before therapy? In how many instances is the delayed effect—10, 15, or even 30 years later—malignancy? Only rarely are such cases reported, and rarer still will be the case of the patient returning when the treatment is unsatisfactory to the physician who initiated treatment. I do not believe that anyone at this time knows the answers to these questions, but we do need the answers.

Recently investigations have been reported that give partial answers to some of my questions. To cite but two, I might mention the studies by Aub and others [7] and those of Simpson and co-workers.[8,9] On the other hand, we have the work of Muller on genetic effects of radiation and the attempt to refute them by citation of a follow-up for several generations. When, according to Muller,[8] genetic effects may not show up for 20 or even 40 generations, it is a little absurd to attempt to refute such a statement with a follow-up of only three generations. The few suggestions that the medical profession be aware of genetic hazard from radiation and attempt to minimize such hazard have often been met by a type of polite ridicule. It is unfortunate that our medical training has not prepared us to receive this awe-inspiring possibility with an open mind. To minimize the possibility of damage in utero, the suggestion has been made that the chest film of the pregnant woman be taken with a leaded apron draped from her waist. This suggestion has generally been met with a smile or with open hostility. Thus, by not recognizing the possibility of danger, there is no danger. This is a dangerous doctrine.

Training of the Physician

It is a rare internship or residency, other than that in radiology, that includes experience in the radiology department or gives formal training in how to perform the radiological procedures that the future practitioner may be called upon to perform. How many internists have been shown, in the course of their training, how to use a fluoroscope in order to get the most out of the instrument with a minimum of danger to either the patient or themselves? How many orthopedic surgeons are taking films in the operating room during a hip-pinning without someone to hold the cassettes? How many residents in dermatology receive adequate training in the use of radiation therapy as commonly used in their specialty? By adequate training, I mean the type of training that the radiation therapist will accept as of good caliber Chamberlain [6] has written about the training of the nonradiologist: "Other physicians who need to use radiation in certain fields, can, and should, receive training in the special problems of radiation protection. To omit this important training for even the use of chest fluoroscopes or occasional radiography is the equivalent of omitting the basic training in any of the medical fields in preparation for the use of life-giving but potentially dangerous agents . . . ." Unfortunately, most of Dr. Chamberlain's fellow radiologists do not appear to share his feeling in this regard. Yet interns and residents complete their training and go into the world to practice medicine. For convenience or other reasons they purchase x-ray equipment and use it whether or not they happen to have had adequate training.

In a recent survey of one area, widespread use of the fluoroscope by pediatricians was noted.[10] Of some 35 fluoroscopes studied, less than one-half dozen could come close to meeting current standards.[11] There were numerous examples of equipment that generated more than 20 r per minute at the table top as contrasted to the present recommendation of a maximum of 10 r. Almost without exception, the pediatricians in office practice failed to carry out dark adaptation fully, many taking no time at all. To compensate, the screen

brightness was increased, thereby increasing dosage to both patient and physician. Many of the physicians surveyed used neither protective gloves nor aprons. Many x-ray machines had inadequate filtration, inadequate cones, faulty shutters, and unprotected high-voltage wires. Ungrounded equipment was common, to mention an easily remedial nonradiation hazard. Though five of the physicians seen showed some evidence of radiation damage, it was the low-usage factor that undoubtedly prevented more extensive damage to the physician. Some of those surveyed do routine fluoroscopy of each child. I know of no figures indicating the value of this procedure to balance against the possibility of unnecessary radiation exposure.

What is most disquieting is that the situation described in 1955 is virtually unchanged from that described by Buschke and Parker in 1942 in Seattle.[12] They found failure in equipment not different from that our study again showed in 1955. The studies by Sonnenblick in New Jersey highlight the difference in usage between the radiologist and the nonradiologist.[13] He found that, for similar-sized patients under a fluoroscope, a radiologist might be using 1 ma. and producing a dose rate of 2 r per minute at the panel, the internist 2 ma. with a dose rate of 20.3 r per minute, and the pediatrician 5 ma. with a dose rate of 43.8 r per minute. Although these are not necessarily representative figures, the acceptable level at the time of this survey was 20 r per minute. The acceptable output is now 10 r. In my experience, office use of fluoroscopes seldom approaches these standards.

There is no evidence at this time that the information about protection from radiation and proper usage is reaching either the new or the established practitioner. Evidently the newer knowledge and the increased importance being attached to unnecessary exposure to radiation are not being disseminated to our training institutions. The physician is not alone exposed to radiation. In addition to the patient, there are often the nurse, the technician, the nurse's aid, the student nurse, and anyone else who may be helping out. These people are additional responsibilities and additional reasons why the physician's training in the use of radiation requires improvement.

Needs of the Future

The uses of radiation in medicine and industry are widening yearly. Such an increase in usage correspondingly increases the likelihood of radiation exposure in a larger percentage of our population. To this increased use must be added the extra increment, however small, of radiation from atomic and hydrogen bomb fall-out. Because of our knowledge of the biological effects of radiation, it becomes increasingly urgent, as one of our responsibilities for the public health that we answer certain questions regarding medical usage of radiation and the training of the physician for that usage. The following are such questions. 1. What results from radiation therapy of nonmalignant conditions would be as well or better accomplished by other modalities of treatment? 2. What radiodiagnostic procedures are of value in specified situations and how often is it worthwhile to repeat the same procedure? 3. Is there really any value in limiting radiodiagnostic procedures in females in the reproductive age to the period immediately after menstruation as has been suggested? [14] 4. Can adequate training in specific diagnostic or therapeutic radiation techniques be given all medical practitioners as well as the specialist in order to satisfy minimum professional needs? 5. Will the radiologist assume responsibility for the training of other physicians in radiation in order to satisfy their minimum requirements in the use of radiation?

A last question might well be whether the physician, the physicist, or the engineer is to assume responsibility for the health of the population in relation to actual or potential exposure to radiation. The medical profession must be willing to concern itself with more than just the care of the patient; it must assume its full place in the public health picture with concern for the prevention of disease as well as its treatment. The concern for protection from radiation damage is a legitimate medical responsibility that will be assumed by others less able by training to evaluate the potential biological hazard, if the medical profession as a whole does not assume the responsibility.

Comment

In summation, I should like to quote from the preface to a recently printed booklet on protection from x-rays.[11] This booklet was issued by the National Committee on Radiation Protection, a group consisting of representatives of most of the professional and official groups concerned with radiation.

> The increasing use of ionizing radiations makes it necessary for the medical profession to exercise great caution and restraint in the use of these agents. Current methods and practices should be reviewed to see if the same result could be obtained with less radiation . . . Dermatologists and radiologists should avoid as much as possible the use of radiation for the treatment of benign conditions of persons occupationally exposed to radiation. It should be the duty of the physician, when prescribing radiation treatment, to ascertain if the patient is occupationally exposed to radiation.

I would add only that, if the x-ray equipment and the radium in the hospital or physician's office were treated with as much respect as the nuclear reactor and if safety requirements were as stringent as they were with intravenous therapy in the early days of intravenous therapy, we would have no question of difficulty. Unless some action is taken to improve conditions, we shall see a steady growth of regulating legislation such as has already been promulgated in one or more states. With such regulation must inevitably come restrictions on individual freedom in medical practice.

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CLINICAL INVESTIGATION IN NAVAL HOSPITALS

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• *The pursuit of clinical research in naval hospitals is advantageous to the hospitals themselves, to the Navy, and to medical science in general. Such clinical research is at present based on a well-defined program only to a limited extent; to some extent it depends on the initiative and special interests of individual medical officers. Research projects, whether individual or organized, are encouraged in every way consistent with regulations. Continuity of research can be favored by establishing clinical investigation centers, by association with universities, and by various other means. The financing depends ultimately on appropriations from Congress for the overall research of the Department of the Navy. The public needs to be impressed with the fact that in the naval hospital every advantage is taken of facilities to improve the care of the patients.*

Just as is true of the civilian hospital, the main purpose of the naval hospital is the care of the patient. The doctors, administrative personnel, nurses, dietitians, and secretaries have much the same function in both types of hospital. This is true also of acquaintance with the literature, attendance at scientific meetings, conferences with personnel of other institutions, staff meetings, seminars, and teaching of house officers, nurses, and other students. With these similarities, there are also differences in staffing, administration, and other functions in the two types of institutions. There is, however, a unity among naval hospitals, in that the pattern of operation is the same throughout, so that service in one hospital is directly continued with transfer of personnel to other hospitals. In many civilian hospitals, research is active and extensive, but this has been only moderately developed in the group of naval hospitals. The purpose of this paper is to indicate how clinical research in naval hospitals is currently conducted and how it may be expanded.

Naval Medical Research

Medical research in the Navy is conducted (1) in research laboratories of the medical department, (2) in naval hospitals, and (3) by contracts with extramural agencies through the biosciences division in the Office of Naval Research. Inservice research is under the direction of the surgeon general of the Navy, but this function is administered by the research division of the Bureau of Medicine and Surgery, with the aid of the medical research advisor to the surgeon general. The laboratories cover a broad spectrum of medical research, from fundamental studies to operational problems such as those of naval aviation and submarine medicine. Details are covered in other publications. Projects submitted to the Office of Naval Research are referred to the research division of the bureau for comment and funding. By this means universities and nonprofit research agencies undertake studies that fill in gaps in knowledge and otherwise aid the broad field of medical research of the Navy. With the cooperation of the bureau, of the Office of Naval Research, and of civilian agencies, an over-all program has been developed, carefully balanced as to the areas of interest and operations. More or less peculiar to the Navy is the fact that projects are initiated by the investigators, who are guided by the over-all program established jointly by the bureau and the laboratories. The higher echelons of the Department of Defense advise in various directions, especially the Assistant Secretary (Research and Development), the Assistant Secretary (Health and Medical), and the Chief of Naval Research. Aid is given by the National Research Council, especially its committee on naval medical research.

In only a limited way is clinical research in naval hospitals currently based on a well-defined program. Doctors in the hospitals, either singly or in groups, undertake projects that are initiated by their interest in a series of cases, in special studies of individual cases, and in methods of diagnosis and testing of therapeutic regimens.

The establishment of clinical investigation centers in naval hospitals must be accomplished within the framework of the hospital and naval regulations. The research projects of individual medical officers, outlined above, are not necessarily based on a program but naturally will be continued. The proposal for clinical investigation centers will provide for programmatic research and is broadly based to include not only the medical officers specifically assigned to the center but also other

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officers in the hospital who may wish to participate in the program and carry out such ideas and projects as they may devise in their particular fields. At least three aspects deserve consideration; namely, (1) the advantages to the Navy and to medicine in general, (2) the organizational patterns, and (3) financing.

Advantages of Clinical Investigation Center

The advantages to the Navy and to medicine as a whole are closely interrelated. The advantage to medicine as a whole is obvious, in that new knowledge obtained by research is valuable to all engaged in medicine. For realization of full advantage to the Navy, it is essential that the center shall be an integral part of the hospital. In these circumstances it may well augment the justifiable current pride of the personnel in the medical department of the Navy. The *esprit de corps* is excellent, but the advancement of medical research is calculated to elevate it. With the advantage of productive research, a good residency program, and competent staff members, service in a naval hospital is as attractive as is true of many civilian hospitals. This contributes to procurement of house officers, medical officers, and consultants. It is well known that medical students seek appointments as interns after discussion with their faculty advisors, experienced graduates, and fellow students. The faculty advisors consider all aspects of the hospital program and are guided in part by the research activities to which the intern is exposed. This is also largely true of the experienced graduate and in some measure of the fellow students. However, basic to all this is the reputation of the hospital, and that reputation rests in considerable measure on the teaching provided. There are various factors that make a good teacher, but the main one is inspiration for advancement of knowledge; this inspiration derives largely from productive investigation. In the over-all view, and with only rare exceptions, the best teacher is the man who enlarges his field by research. It does not necessarily follow that only the university hospitals fill the bill, for there are several hospitals without close university connections that are equally desirable from the student point of view.

Procurement is of interest as it applies to the regular medical officers, the reserve officers, and the consultants. It is not to be supposed that all will take part in research, but the stimulus offered by clinical investigation gives support to the hospital duties and may induce some not previously deeply interested to undertake research. Another possibility is that reserve officers on active duty may wish to become members of the regular corps. Important also is the interest of the allied sciences branch of the Medical Service Corps and of other personnel.

Organization

The organizational plan for a clinical investigation center entails consideration of the regular medical officers, reserve officers on active duty, other naval personnel, and civilian employees; sympathy and support by the hospital administration; and association with a university. There are regular medical officers who are dedicated to research and who, despite the policy of rotation, continue their research in different duty stations; however, the policy of rotation is not rigid, and, in special circumstances, an assignment may be prolonged. Reserve officers on active duty have often contributed to the program, but their tours of duty are fixed and their return to inactive status may interrupt projects. Occasionally a reserve officer will extend his tour in order to finish his investigation. The current policy of the medical department of the Navy is to encourage research in every way consistent with regulations, and, in this way, continuity is also preserved.

Continuity is additionally favored by the long service of civilian consultants, but it seems wise to plan for additional assurance. The approach then is via the medium of university association, so arranged that the integrity of the center as a naval establishment is maintained. The closer the university is physically, the better is the outlook.

There are two components, the military and the civilian. It is expected that the staff of the center will be augmented by civilians on a full-time and stable basis. Certainly one or more of these should be clinical men of good background in science and research, who will continue to be motivated by a consuming desire for productive investigation. In addition, there should be civilian scientists qualified in the so-called basic sciences, not necessarily doctors of medicine. These two groups would work harmoniously with the medical officers, consultants, and university authorities. Technical, secretarial, record-keeping, and editorial services are essential.

At this time it seems unwise to plan a definitive table of organization. Much depends on the quality and number of personnel, as well as funds available and other factors. Tentatively it seems practical to think of the operations as being under the supervisory direction of a council or committee composed of two representatives of a cooperating university and two medical officers of the naval hospital.

University Affiliation

The cooperation of a university is highly desirable from several points of view, too obvious to require enumeration. Such cooperation assures the continuing interest of competent investigators in prosecution of the program but at the same time raises a question as to how the civilian component of the center is to be employed. This might be through (1) civil service appointments or (2) contracts. At the present time it seems undesirable to make all employment on a civil service basis, but the reasons would require a consideration of the advantages and disadvantages of this type of appointment beyond the scope of this paper. Therefore, it seems that attainment of the objectives of the center would best be accomplished on the basis of a contract between the university on the one hand and the Office of Naval Research and the Bureau of Medicine and Surgery on the other. The details of such a contract would be settled on the basis of mutual agreement between the agencies concerned. The contract would provide funds for university participation and overhead, the funding to be by the Bureau of Medicine and Surgery. Naturally, any such contract would meet the approval of the command of the hos-

pital. Payment of salaries and wages of civilians employed in the center would be through university channels, except that in some instances there may be a few in the staff who are already civil service employees. These latter are paid directly by the hospital. Those employed on a contractual basis must depend on the good faith of the Navy in the assurance of long-time operation of the center. Since congressional appropriations are on an annual basis, the positive commitments can only be annual; however, there is every indication that the Congress will continue its support in adequate degree. It is to be assumed that the cooperating university may wish to use personnel of the center in such instances as teaching and conducting of seminars. The Navy will welcome such association, and it is likely that the university will confer academic ranks in accord with the attainments in science.

Financing

The financing of medical research in the Navy and its hospitals is somewhat different from that which prevails in civilian hospitals. On the basis of a full acquaintance with the many items, Congress appropriates funds for the over-all research of the Department of the Navy. An allocation is made for medical research. The research division of the Bureau of Medicine and Surgery, with the approval of the surgeon general, further allocates sums for the various phases of medical research. In this allocation are the moneys for research in the naval hospitals and support of the clinical investigation center proposed for the U. S. Naval Hospital, Oakland, Calif.

Comment

There can be no disagreement with the statement of R. H. Williams[1] that the clinical investigator requires (1) clinical wisdom, (2) human relationships, and (3) scientific critique. All these are applicable to naval hospitals, but the human relationships or public relations are especially important in such an establishment as a naval hospital. This justifies a consideration of the social aspects of clinical investigation. The patients in the naval hospital are service personnel and their dependents. The hospital is much in the public eye, even more so than the civilian hospital. The parents and relatives of service personnel must be satisfied that the best of care is given. Studies that are of no direct benefit to patients cannot be condoned. Any experiments that may be dangerous cannot be permitted, and any that may disturb the cordial patient-physician relationship common in naval hospitals are excluded. These social relationships are self-evident. Not so clear is the necessity for impressing on the public the fact that in the naval hospital every advantage is taken of facilities to improve the care of the patients. The naval hospital should take its place among all other medical institutions in providing for progress—progress for the welfare of the whole structure of medicine, both military and civilian.

The opinions expressed are those of the writer and do not necessarily reflect those of the Department of the Navy or the naval service at large.

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PSYCHIATRIC INTERVIEW AS TOOL OF MEDICAL DIAGNOSIS

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• *Emotional problems or "nerves" are often considered etiological agents of relevance in many conditions for which patients consult physicians. This diagnosis cannot be justified or supported by an evaluation of symptoms alone, but data allowing a positive psychiatric diagnosis should be elicited. The absence of such data should cast doubt on the diagnosis and indicate the need for further investigation. Six case histories illustrate instances in which the use of the above principle was valuable in arriving at a proper diagnosis and planning an effective therapeutic approach.*

Recently much emphasis has been placed on the fact that emotional disturbances account for a great many of the conditions for which patients consult physicians. This emphasis sometimes leads the busy practitioner to accept psychoneurosis as the diagnosis without critical evaluation of the data leading to this conclusion. It is my purpose here to point out some of the pitfalls in psychiatric and medical practice that can arise by the uncritical use of psychiatric diagnosis. The dynamic psychiatric interview, when carefully used, can be an instrument of some precision whose principal ingredients are the skill of the interviewer and his insistence upon being allowed enough time to use his tools adequately. Although the psychiatric interview often may not indicate the nature of the organic disease from which the patient may be suffering, it may cast doubt on psychiatric disease as an explanation and thereby indicate the necessity for further examination.

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The psychiatrist who sees patients in diagnostic consultation must be continually aware of this possibility and strive to sharpen his diagnostic acumen and also view his patient as a whole and not only as a psychiatric problem. He must be prepared to exclude psychiatric disease as an explanation of the troubles for which the patients come to him and must be humble enough to request further diagnostic help from his medical colleagues in situations in which he has reasonable doubt as to the positiveness of his diagnoses. The

proper function of the physician is to relieve pain, whatever its cause, and, if the source of discomfort is in the environment, the physician, no less, is required to elucidate the data that make the assumption valid and to discuss his findings with his patient. Failure to assume this responsibility leads the physician to make diagnoses by exclusion. This pitfall is illustrated in case 1.

Report of Cases

Case 1.—A 37-year-old woman was referred for psychiatric evaluation primarily because of the incompatibility of her many complaints with any recognizable pattern of organic disease. Her chief complaint was of sudden sensations in any or all parts of her body that appeared when she was upset or irritable, when she heard sudden and unexpected noises, or when she suddenly moved her neck, although these sensations could not be reproduced during the examination. In addition, she complained of a "bloated abdomen" and a feeling that "something slips in my back" when going up and down steps.

After having a thorough psychiatric history, the psychiatrist noted, "I cannot make a definite psychiatric diagnosis on this patient. Her symptomatology is bizarre, but her general manner and her life history do not impress me as those of a patient who is so emotionally ill as to produce the present somatic picture." After seeing the patient in several more interviews and talking with the husband, the psychiatrist asked for further neurological consultation. She was found to have absent abdominal reflexes, dysesthesia of the soles of the feet, and bilaterally accentuated Babinski reactions. The neurologist felt that the sudden sensations represented Lhermitte's sign, which is pathognomonic of multiple sclerosis, and suggested this diagnosis. When the psychiatrist discussed this diagnosis with the patient, she admitted that a similar diagnosis had been made previously by a competent neurologist elsewhere, but that she had concealed this fact because she wanted an "independent opinion." Further discussion then revealed that she had been responsible for the nursing care of a friend in whom a syndrome of organic disease of the brain had developed and she had been terrified by the thought that she had the same illness as the friend.

An all too common assumption is that people have neurotic symptoms in order to get attention or sympathy or to otherwise influence the behavior of others. The prominence of what appears to be a large secondary gain may often lead to an erroneous psychiatric referral (case 2).

Case 2.—A 45-year-old married woman came to the Mayo Clinic because of repeated episodes wherein her behavior became peculiar; everything appeared distorted, color vision became faulty, and she behaved as if intoxicated. Upon recovery, she had complete amnesia for the episode. She had been referred to a psychiatrist because in one episode a physician had been called and, while she was awaiting his arrival, she had drunk a cup of cocoa. When he arrived, she was perfectly normal. Shortly after his departure, she again lapsed into "sleep," and her husband called the physician the following morning, which was Saturday. She could be aroused but was confused and disoriented. It was ascertained that the husband had planned a fishing trip that morning and had been prevented from going because of his wife's condition. Further history revealed that many of the previous episodes had occurred under similar circumstances. The psychiatric referral had been made on the assumption that her episodes were calculated to prevent his fishing trips, which she disapproved of. Further investigation revealed a hypoglycemic picture, and her symptoms were reproduced by a 19-hour fast. Operation disclosed a pancreatic adenoma, the excision of which relieved her of the difficulty, a 24-hour fast then being survived with no symptoms. Further history then revealed that, when her husband planned fishing trips, she slept late and did not eat breakfast, and often friends had discovered her in a comatose condition. Both she and they had then reproached the husband for exposing her to such an occurrence.

Neurotic illness does not develop for the reasons described above, but because of the attempt by the patient to achieve some measure of adaptation in the face of intolerable, unconscious emotional conflicts. The secondary gain occurs only after the illness is established. This patient did not give any data to validate a conflict of sufficient magnitude to cause such symptoms, and, once neurosis was eliminated, the procedures leading to a diagnosis were quite simple.

Many years ago Sir William Osler established the valuable dictum that a single diagnosis must be made to explain all the symptoms of the patient. Like all dictums, however, this one loses its value if it is observed too slavishly (case 3).

Case 3.—A 42-year-old married woman came to the clinic complaining of lethargy, fatigue, insomnia, anorexia, constipation, amenorrhea, and inability to concentrate. She had been referred for electroshock treatment after a psychiatric consultation at home. She described episodes of forgetfulness of recent events in a peculiarly humorous fashion and described herself as "comical." No self-depreciation or feeling of guilt was elicited, however. Medical and laboratory examinations revealed a myxedematous patient with a basal metabolic rate of −39% and a value of 1.0 mcg. per 100 cc. of blood for protein-bound iodine. She was treated with thyroid extract, and the symptoms of myxedema disappeared. Her psychiatric symptoms remained only slightly improved, but since such symptoms are often the last to disappear in myxedema, a period of watchful waiting was decided upon.

The patient was seen eight months later and was adjudged to be euthyroid. The basal metabolic rate was −3%, and the value for protein-bound iodine was 4.6 mcg. She still complained of anorexia, lack of interest in home or family, and crying spells, and, although she was less forgetful, she still had trouble thinking and calculating. The psychiatrist was again impressed by the lack of guilty self-depreciation; as the patient expressed it, "I worry because I do not worry about my situation enough." She expressed anxiety about going down stairs and admitted to have fallen once and had awakened on several occasions with uncontrollable swallowing movements. She insisted that she felt there was something organically wrong with her and that her difficulties were not on a functional basis. Psychological testing revealed a test deficit with occasions of confusion that the psychologist felt to be on an organic basis. An electroencephalogram disclosed a grade 2 dysrhythmia focalizing in the right parieto-occipital region. Pneumoencephalography revealed a communicating porencephalic cyst in this region. No surgical treatment was recommended.

Although nothing could be done to alleviate her symptoms, the patient was glad to have had her own diagnosis confirmed and then to be absolved of "neurotic complaining." Modification of environmental responsibilities left her functioning well at a level within her capabilities.

The psychiatrist in this instance was made suspicious by the absence of some important features of depression in the clinical picture. The patient had many features of depression—psychomotor retardation, fatigue, disturbed sleep pattern, anorexia, constipation, and fits of crying—but missing was a very important criterion for the diagnosis: an endogenous loss of self-esteem and the presence of self-depreciation. In addition, she gave no historical data such as early emotional deprivation that would make her prone to depression, and no data could be elicited relative to shifts in her life situation that would diminish her self-esteem. The possibility that an individual may have two diseases must be constantly borne in mind, especially when one of them is an emotional disease. Perhaps one of the most valuable questions to ask a

patient, once a satisfactory rapport has been established, is, "What do you honestly believe is your difficulty?" If the question is asked sincerely, it is surprising how often the patient is able to provide significant leads, as was so in case 3.

Frequently patients couch their complaints in such bizarre language that the physician can only conclude that the individual is psychotic. This is not invariably so, and the physician must be constantly aware that verbal behavior is often an inadequate tool for becoming acquainted with a patient's difficulties (case 4).

CASE 4.—A 61-year-old woman was referred by the ear, nose, and throat department because of her bizarre complaints of "ants crawling in and out of my skull." She insisted that a powdery substance was dropping from her skull to her neck. She was sure that previously a swarm of bees had flown into her ear and had not emerged. She maintained that the insects were really there and that this was not just a mannerism of description. Neurological consultation and x-ray examination of the skull resulted in an opinion that the patient had a tumor in the left frontotemporal region extending toward the base of the skull. Neurosurgical exploration revealed an intradiploic epidermoid cyst that was intruding intracranially; it extended underneath the left frontal lobe and had eroded the base of the skull. The surgeon noted that it was filled with a grumous powdery material "such as might be produced by ants."

The psychiatrist in this case, while being impressed with the bizarreness of the description and the rigid and delusional way in which the patient persisted in this type of description, was not satisfied. He attempted to find other psychotic elements in her behavior such as are frequently present in the patient with a somatic delusion. Patients with somatic delusions can often be led by skilled psychiatric interviewing to admit that they ascribe their difficulties to malignant machinations by persons, specific or nonspecific, in their environment. This patient had no such paranoid ideation nor was she otherwise psychotic, and further investigation revealed the nature of her difficulty.

The physician is often misled by his own emotional prejudice, which has been aroused by the patient's past behavior. This is especially true of those patients who are careless with the truth, ne'er-do-well, or alcoholic, as shown in case 5.

CASE 5.—A 43-year-old man, an unemployed laborer, was referred for psychiatric evaluation because of inability to work more than one or two days a week, fatigue, confusion under stress, backache, headache, and visual disturbance. He gave a long history of inadequate vocational and social adjustment. He had never held a job long and had been alcoholic for many years, being hospitalized for alcoholism three years previously. His life history revealed a long pattern of passive-dependent, immature, and impulsive behavior. He had fallen from a truck five years before, and this was followed by a period of unconsciousness. He had had a careful neurological examination and had been observed in the hospital for several days, but no evidence of intracranial neurological disease was noted. A long series of compensation suits followed this, but these had been settled with finality two years previous to this admission. He had been referred out of desperation by his local physician and the local welfare board because of his inability to remain employed.

Because his behavioristic pattern was relatively unchanged and because the patient described with some detail periods of confusion associated with clear-cut visual disturbances, in that objects to his right were always blurred and that he became confused when more than one object was in the visual field at one time, he was referred for neurological examination. This gave essentially negative results, but x-ray examination of the skull revealed an area of calcification to the right of the sella, which was much more pronounced than was indicated in roentgenograms taken five years previously. A right carotid angiogram did not reveal a mass intracranial lesion. The condition is still being studied, but it has been concluded that he has a right parasellar neurological lesion in addition to his lifelong character neurosis.

In this situation, the patient's severe and lifelong character neurosis, which had led to his poor general life adjustment and passive-dependent traits, made it easy to ascribe his symptomatology to his desire for further compensation, although a careful history revealed the fact that no further compensation was involved and, further, that the patient knew it. He was frank and realistic about his poor adjustment in the past, but there was nothing to indicate that this lifetime type of character neurosis should suddenly revert to a more integrated type of hysterical neurosis, which was the only way his presenting symptoms could be explained.

Comment

The contributions of psychiatry to medicine in recent decades have added a new dimension of rationality to the practice of the art of medicine. The notion of treating the person instead of the disease by use of the rational body of knowledge now accumulated is leading to a revolution now known as the practice of comprehensive medicine. This ancient ideal has been more closely approached by new insights into the effects of emotion and life situation on disease processes. But to take full advantage of these insights the knowledge must be used with the criticalness and skepticism that are the hallmark of good medical practice.

The psychiatrist who is asked for a diagnostic consultation on a patient with somatic complaints should endeavor to be as precise as possible in the rationale of his opinion. The positiveness of his opinion can be increased if he finds the clinical picture, psychodynamic history, and psychogenetic history in support of one another. In addition, he should endeavor to explain, from the above data, why the patient felt ill at the particular time he did and why he felt ill with his particular symptoms as an expression of emotional conflict. Insofar as he is unable to satisfy these criteria, the psychiatrist should be quite conservative in his opinion and eager for further investigation.

The practitioner who ascribes the complaints of a patient that could possibly be structurally caused to an emotional cause assumes a grave responsibility. Errors in diagnosis in this direction can threaten the patient's life or at best deny him the benefit of medical treatment, which more energetic diagnostic procedures would make available to him. On the other hand, insistence by the practitioner on a physical cause when the primary problem is an emotional one can prolong the disease and further solidify the patient's objection to psychiatric investigation. Referral of the patient for a diagnostic psychiatric interview may clarify the issue in both instances, provided the psychiatrist effectively brings to bear the tools of his specialty and is humble enough to say occasionally, "I don't know."

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ANTIDIURETIC RESPONSE TO PIPEROXAN AS A DIAGNOSTIC TEST OF PHEOCHROMOCYTOMA

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• *Observations on the renal functional effects of piperoxan in patients with hypertension due to functioning pheochromocytoma had shown that, in such patients, this drug provokes a decrease in urine flow. This suggested that, with standardized hydration, the effect of piperoxan on urine flow might be useful in the evaluation of patients suspected of these tumors. Accordingly, fasting, recumbent patients were given 1 liter of 0.25% solution of sodium chloride orally and urine was collected for three or four successive 30-minute periods, the usual test dose of piperoxan being given intravenously after the second urine collection, when its effect on blood pressure was also observed.*

In 3 normotensive patients and 32 patients with hypertension not due to pheochromocytoma, including 7 in whom piperoxan induced decreases of systolic pressure more than 30 mm. Hg, piperoxan had a diuretic effect, in that the volume of the third urine sample exceeded that of the second. The physiology of pheochromocytoma was then simulated in seven normal subjects by giving them infusions of levarterenol with and without a mixture of epinephrine. In these the diuretic response to piperoxan was not observed and antidiuresis occurred in those receiving the mixture of the two pressor amines. Further, in two patients with hypertension due to functioning pheochromocytoma, the volume of the third sample (after administration of piperoxan) was substantially less than that of the second urine sample.

The procedure is described as a confirmatory observation in the diagnosis of functioning pheochromocytoma. It seems to have the advantage of giving normal, diuretic responses in patients who show nonspecific depressor responses to piperoxan. Note is also made of the frequent occurrence of "false-positive" depressor responses to phentolamine in patients with essential hypertension under treatment with preparations of Rauwolfia.

Various adrenolytic and sympatholytic compounds have been used in pharmacological tests to establish the presence of functioning pheochromocytoma. None of these tests is conclusive. In the presence of hypertension, the two principal agents used are piperoxan (Benodaine) hydrochloride, which is primarily adrenolytic, and phentolamine (Regitine) methanesulfonate, which is both adrenolytic and sympatholytic. False-positive or depressor responses are observed with both agents, particularly in patients with uremia and also in those taking sedatives and certain antihypertensive drugs.[1] As noted below, false-positive responses are relatively frequent in patients who are taking Rauwolfia drugs and who are tested with phentolamine. Patients with hypertension very often are given barbiturates and/or Rauwolfia drugs and sometimes have uremic conditions, so that the occurrence of false-positive responses confuses the diagnosis of hypertension that is due to pheochromocytoma.

In a study of renal functional responses to piperoxan, Corcoran, Dustan, and Page[2] noted that piperoxan usually was somewhat diuretic in effect in patients who had hypertension from causes other than pheochromocytoma, whereas it was antidiuretic in four patients who had hypertension that was due to pheochromocytoma. The antidiuretic responses were proportionately greater than the falls of blood pressure elicited by the drug. They suggested that, under standardized conditions, the response of urinary flow to intravenous injection of piperoxan might serve as a confirmatory test in the evaluation of the blood pressure response. Accordingly, a simple procedure was devised and tested in patients with normal blood pressure, in patients with hypertension, in two patients with pheochromocytoma, and in persons with normal blood pressure who had been given intravenous infusions of levarterenol or mixtures of levarterenol and epinephrine, thus mimicking the altered physiology of patients having pheochromocytoma. The observations show that the measurements of urine volume constitute a simple, useful confirmatory procedure and, more significantly, that they are an aid in identifying false-positive, depressor responses to piperoxan.

Methods and Materials

The procedure was as follows. Fluid was allowed ad libitum, but food was withheld overnight. At 8 or 9 a. m., 1 liter of 0.25% sodium chloride solution was given orally, usually during the course of 10 minutes, after which time the patient voided. This urine specimen was discarded. The patient was asked not to smoke and to remain recumbent during the test, arising only to void. Urine was collected at 30-minute intervals for three or four periods, and the volume of each sample was measured. Immediately after the second voiding, piperoxan hydrochloride was given intravenously at a rate of 20 mg. in two minutes. While three or four urine collections were usually obtained during this study, the use of the test in diagnosis requires only the collection of specimens immediately preceding and after the administration of piperoxan.

The persons who were studied included 35 as controls. There were 3 with normotensive and 32 with hypertensive conditions. Among those with hyper-

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tension, 22 had uncomplicated essential hypertension, 4 had essential hypertension in the malignant phase, 3 had chronic glomerulonephritis, one patient had chronic pyelonephritis, one had bilateral renal artery stenosis,* and one had diabetic intercapillary glomerulosclerosis; 7 of the 32 had azotemia (with blood urea levels of 60 mg. per 100 ml. or greater and serum creatinine levels of 2.9 mg. per 100 ml. or more). One patient with functioning pheochromocytoma was studied before and after removal of the tumor. An experimental group of seven healthy volunteers were given infusions of levarterenol or a mixture of levarterenol with epinephrine, during the administration of which the tests were performed as described.

Results

Control Group.—The data for 35 patients are summarized in table 1. Among these patients, 28 (group A) showed little change or an increase in systolic blood pressure; 7 (group B) showed decreases ranging from 30 to 72 mm. Hg and were considered to have false-positive, depressor reactions. Among these seven, four had azotemic conditions. No cause was established for the responses in three patients, although they may have been taking barbiturates. All of these patients (including those with depressor responses) during the 30 minutes after receiving piperoxan showed increased urinary flow as compared with the urinary flow in the 30-minute preinjection period. When expressed as a ratio of urine volume before the administration of piperoxan to the urine volume after it, the values ranged from 0.89 to 0.24, averaging 0.56.

After injections of phentolamine, five of the patients with nonuremic hypertensive conditions (cases 11, 12, 13, 14, and 26) showed decreases in blood pressure greater than 40/30 mm. Hg; the drop in one of these was 62/40 mm. Hg and in another 60/30 mm. Hg.

TABLE 1.—*Blood Pressure and Urinary Flow in Response to Piperoxan Hydrochloride in Thirty-Five Control Patients*

Group	Case No.	Blood Pressure		Urine, Vol. in Ml.				Ratio of Vol. of Collections	Remarks
				Before Administration		After Administration			
		Control	Change	1	2	3	4	2 and 3	
A (Those with no significant decrease in blood pressure)	1	138/92	+30/18	78	127	237	150	0.53	
	2	168/114	−4/12	140	160	180	...	0.89	
	3	180/90	−12/0	33	69	220	...	0.31	
	4	186/90	−16/0	35	118	194	...	0.61	
	5	140/86	+12/2	24	96	130	62	0.74	
	6	164/104	−10/8	125	172	300	100	0.56	
	7	240/102	0/0	31	70	176	...	0.40	Blood urea level 65, serum creatinine level 3.8
	8	210/120	+30/12	32	38	255	250	0.15	
	9	170/100	−14/0	22	54	79	...	0.68	Blood urea level 60, serum creatinine level, 3.1
	10	154/90	0/0	27	30	74	...	0.41	
	11	224/110	−0/30	110	250	350	...	0.82	Phentolamine (−60/30)
	12	250/150	+30/0	22	110	360	300	0.31	Phentolamine (−44/30)
	13	226/120	−14/12	25	108	303	...	0.35	Phentolamine (−62/40)
	14	204/108	+16/4	18	120	362	219	0.33	Phentolamine (−42/30)
	15	200/96	0/0	13	40	72	...	0.56	Blood urea level 104, serum creatinine level 4.6
	16	220/130	+20/18	65	140	215	...	0.65	
	17	200/136	+10/4	22	80	118	130	0.67	
	18	162/100	−18/12	63	120	222	...	0.57	
	19	188/104	−10/10	40	108	186	...	0.58	
	20	194/114	+8/6	34	88	156	...	0.56	
	21	136/88	+12/0	36	90	156	...	0.58	
	22	204/100	+10/0	76	126	200	...	0.63	
	23	186/100	+10/0	58	65	96	...	0.68	
	24	204/114	−6/8	54	76	150	...	0.51	
	25	250/104	+10/8	80	186	242	...	0.77	
	26	172/100	+38/20	24	98	260	...	0.38	Phentolamine (−42/22)
	27	180/116	+36/10	20	108	397	320	0.27	
	28	148/88	+56/12	110	240	330	430	0.73	
B (Those with fall in blood pressure greater than 30 mm. Hg)	29	190/116	−32/12	20	26	70	85	0.37	Blood urea level 124, serum creatinine level 5.8
	30	236/140	−48/16	65	230	280	280	0.82	
	31	196/88	−34/20	70	78	90	92	0.87	Blood urea level 68, serum creatinine level 2.9
	32	190/120	−38/14	30	53	190	102	0.28	Blood urea level 64, serum creatinine level 3.8
	33	180/108	−30/12	62	330	454	...	0.76	
	34	208/116	−36/18	24	98	197	340	0.50	
	35	212/120	−72/32	28	152	210	322	0.72	Blood urea level 104, serum creatinine level 5.0

Four of these patients had been taking reserpine, and they lost their depressor responses to phentolamine when the reserpine was withdrawn. None showed depressor responses to piperoxan. The condition of one patient who showed the greatest effect from phentolamine (case 13) was not uremic, nor was he taking a Rauwolfia drug; his responses in blood pressure and urine volume to piperoxan were normal, and a bioassay of the urine indicated no excess of pressor amine.

Pheochromocytoma.—The preoperative and postoperative responses of urine volume in a patient with functioning pheochromocytoma (table 1, case 8) are shown in table 2 (case 36). Preoperatively, piperoxan evoked antidiuresis, while postoperatively it evoked

slight diuresis. The early history and findings concerning this young man were summarized by Corcoran, Dustan, and Page.[3] In brief, he was found in 1952 to have bilateral functioning pheochromocytomas. It was not excluded that the tumors were malignant, since they showed mitoses, although there was

TABLE 2.—*Preoperative and Postoperative Responses of Blood Pressure and Urine Volume to Piperoxan in Patient with Pheochromocytoma*

Case No.	Blood Pressure		Urine, Vol. in Ml. Before Administration		After Administration		Ratio of Vol. of Collections 2 and 3
	Control	Change	1	2	3	4	
36*	Preoperative: 200/128	—82/66	34	52	22	14	2.4
	Postoperative, 1 wk.: 134/98	—6/6	27	43	64	...	0.7
	Postoperative, 2 mo.: 144/96	—16/14	62	68	88	500	0.8

* Same patient as in case 8, table 1.[2]

no evidence of capsular penetration. After operation the patient felt much improved, and his blood pressure returned to normal. However, hypertension slowly and progressively returned, and, about November, 1954, he again noticed excessive sweating and redness of his hands. These symptoms increased, and he was seen again in November, 1955. Whereas the attacks prior to the operation in 1952 had been paroxysmal, no paroxysms were observed during this recurrence.

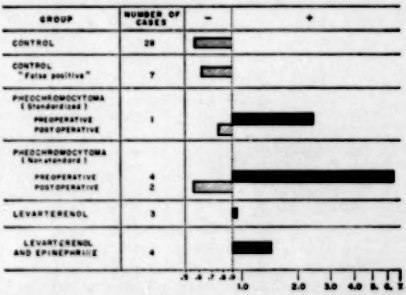
On examination, the significant physical findings were persistent tachycardia and a blood pressure of 208/150 mm. Hg. The basal metabolic rate was +49% of normal. The phentolamine test showed a fall of pressure of 62/60 mm. Hg, and the fall after administration of piperoxan was 82/60, the latter being associated with a decrease in urine flow. At operation, a malignant pheochromocytoma was removed from the left renal area, together with the left kidney, to which it was adherent. Postoperatively, responses to phentolamine, piperoxan, and histamine were all normal, including the responses to piperoxan in diuresis, and his condition has remained symptom-free and normotensive for two months.

TABLE 3.—*Blood Pressure and Urinary Flow in Response to Piperoxan in Normal Subjects*

Experimental Group	Case No.	Blood Pressure: Prior to Administration	Fall	Resting (Preinfusion)	Urine, Vol. in Ml. Before Administration 1	2	After Administration 3	4	Ratio of Vol. of Collections 2 and 3
A (Infusion of levarterenol only)	1	174/80	—20/10	104/64	122	280	313		0.93
	2	166/106	—20/40	124/74	84	304	380		0.80
	3	156/98	—20/28	104/66	130	378	356		1.09
B (Infusion of levarterenol and epinephrine)	1	184/84	—74/36	120/70	133	351	220	172	1.6
	2	148/88	—30/42	118/64	0	134	124		1.08
	3	140/60	—40/40	104/50	28	154	161		0.96
	4	140/68	—26/18	116/68	10	185	95		1.9

Previous observations[2] of the responses in urine volume with administration of piperoxan were not made under the standardized conditions described in the present series. In the former series, four patients with functioning pheochromocytoma had shown antidiuretic responses to piperoxan preoperatively (ratios of urine volumes before and after administration greater than 2), and the two patients tested after removal of the tumors showed diuretic responses with corresponding ratios of urine volumes of less than 1. The observations in the patient in case 36 (table 2), tested under standardized conditions, accord with this experience, in that preoperatively he showed an antidiuretic response to piperoxan that persisted into the second half-hour of urine collection, whereas, after removal of the tumor, the response was diuretic on two occasions.

Experimental Group.—Three healthy male volunteers were infused continuously with levarterenol at rates of 20 to 40 mcg. per minute to maintain the systolic blood pressure in excess of 40 mm. Hg above the resting level prior to performing the studies on response in urine volume to piperoxan. This dosage rate was then maintained throughout the experiment. Four healthy male volunteers were similarly infused with a solution containing epinephrine and levarterenol in concentrations of 1 and 4 mcg. per milliliter, respectively, maintaining an increase in systolic blood



Schematic summary of ratios of volume of urine collection taken immediately after administration in control group of 28 patients with hypertension; 7 control patients with hypertension with false-positive blood pressure responses; preoperatively and postoperatively in groups of 1 and 4 patients with pheochromocytoma without uniform hydration; and in 3 normal volunteers receiving infusions of levarterenol and 4 receiving a mixture of levarterenol and epinephrine. The dotted base line indicates the highest ratio found in the control group with hypertension, and the bars are drawn to the mean of the observations in each group.

pressure that was greater than 25 mm. Hg and a pulse rate more than 30 beats per minute in excess of the resting levels prior to the test. The data are summarized in table 3. Both the depressor and the antidiuretic responses to piperoxan were more striking in the group receiving levarterenol with epinephrine than in the group receiving levarterenol alone. In the latter group the urine volume ratios before and after the administration of piperoxan varied from 0.80 to 1.09, averaging 0.94. In the volunteers infused with levarterenol and epinephrine combined, this ratio ranged from 0.96 to 1.9; three ratios each were greater than 1 and the average ratio of all was 1.2.

Comment

Pheochromocytoma is a rare cause of hypertension, but its recognition may lead to cure. Any simple procedure that will enhance the diagnostic accuracy of

available pharmacological tests is therefore desirable. Infusion of epinephrine or levarterenol in a person who does not have hydropenia has been shown to promote excretion of a dilute urine, the flow greatly diminishing after the infusion has been discontinued.[4] Administration of piperoxan to patients with functioning pheochromocytoma also results in antidiuresis[2] as if by pharmacological "withdrawal" of pressor amine. A like response to piperoxan occurs in healthy volunteers infused with epinephrine and levarterenol and, to a lesser extent, with levarterenol alone. The mechanism of this antidiuretic response is not clearly understood; it is in part attributable to a decreased rate of glomerular filtration.[2]

The antidiuresis that followed injection of piperoxan in patients with functioning pheochromocytoma was marked, the rate of urinary flow decreasing to about one-third for the rate before injection. The urine response after administration of piperoxan appeared to be specific. All controls, whether with normotensive or hypertensive conditions, irrespective of depressor blood pressure response, exhibited increased urinary flow when given piperoxan. Only those with an excess of circulating catechol amines showed antidiuresis.

Among the 32 control patients with hypertension, the greatest ratio of the 30-minute volume of urine before administration of piperoxan to the collection after administration was 0.89; and the average was 0.56. In five patients with proved pheochromocytoma, this ratio was greater than 2 in all instances. After surgical removal of the tumor, the ratio reverted to less than 1 in the case reported above and less than 1 in two other patients having pheochromocytoma who were studied postoperatively by Corcoran, Dustan, and Page.[3] The average ratio in normal experimental subjects in whom only levarterenol was infused was 0.94, whereas infusion of both levarterenol and epinephrine in another group resulted in an average ratio of 1.39. Thus, a ratio greater than 0.9 would suggest a positive antidiuretic response.

We conclude that the procedure described adds to the possibility of diagnosis of pheochromocytoma in office practice. Errors in its interpretation may result from (1) the patient's premature ingestion of the saline load; (2) dehydration or vomiting; (3) pheochromocytoma with paroxysmal hypertension in a normotensive phase; and (4) the presence of a pheochromocytoma that produces levarterenol only.

Summary and Conclusions

Antidiuresis following intravenous administration of piperoxan (Benodaine) hydrochloride was noted in six patients with functioning pheochromocytoma, in four normal subjects infused with levarterenol plus epinephrine, and, to a lesser extent, in three subjects infused with only levarterenol. No antidiuresis occurred after injection of piperoxan into 35 control patients, including 32 with varying degrees of hypertension not due to pheochromocytoma, although 7 of the patients with hypertension exhibited depressor responses that could be classified as false-positive. A simple method, described above, based on the effect of piperoxan on urine volume, may be utilized in an office practice to constitute a useful confirmatory test for pheochromocytoma and, more significantly, as an aid in identifying false-positive depressor responses to piperoxan. False-positive depressor responses to phentolamine (Regitine) methanesulfonate but not to piperoxan were observed in patients with hypertension taking Rauwolfia drugs.

Addendum

Since submission of this paper, the test has been used in the diagnosis of pheochromocytoma in an additional patient (table 4, case 37). The experience demonstrates a further advantage of the procedure, since the widely fluctuant blood pressure levels of this patient vitiated the interpretation of tests dependent solely on measurements of blood pressure. This patient is a woman 58 years old who complained principally of episodes of painless nausea and vomiting, often associated with profuse perspiration and palpitation, which occurred shortly after rising in the morning. In January, 1955, a cholecystectomy was done because of cholelithiasis, with subsequent temporary relief of vomiting, which recurred during the third postoperative month. Diabetes was discovered at the time of operation but was considered mild. She also experienced frequent episodes of nocturnal sweating.

TABLE 4.—*Preoperative and Postoperative Responses of Blood Pressure and Urine Volume to Piperoxan in Patient with Pheochromocytoma*

Case No.	Blood Pressure		Urine, Vol. in Ml.				
			Before Administration		After Administration		Ratio of Vol. of Collections
	Control	Change	1	2	3	4	2 and 3
37	Preoperative						
	160/88	irregular		(vomiting)			
	182/104	irregular	28	73	36	28	2.0
	144/90	irregular	28	88	48	...	1.8
	Postoperative, 1 wk.:						
	104/80	none	30	84	480	...	0.17

The appetite had diminished during the past year, and with this she had lost 20 lb. (9.1 kg.) in weight. She noted polyuria and polydipsia only a few weeks before being seen in May, 1956.

On examination she seemed tense and anxious, chronically ill, and in a dehydrated condition, with acetone odor to the breath. The initial blood pressure was 230/130 mm. Hg. The urine contained glucose, acetone, and diacetic acid; blood sugar level was 543 mg. per 100 ml.; and plasma carbon dioxide–combining power was 10.8 mM. per liter. She was given fluids and insulin, with relief of these manifestations. However, the diabetic state was severely fluctuant, with wide variations in blood sugar levels and frequent insulin reactions, i. e., a state of "brittle" diabetes. Further, it was noted that the blood pressure was also widely fluctuant, with variations from 230/130 to 70/50 mm. Hg during a single observation period of 10 minutes.

Blood urea level was 27 mg. per 100 ml., and basal metabolic rate +14% of normal. Histamine was given at a time when blood pressure was 116/66 mm. Hg, with an immediate fall to 70/50 and secondary rise to 250/144 mm. Hg, at which point the patient complained of nausea, fulness, and flushing. Phentola-

mine was given intramuscularly, with an immediate fall in blood pressure to 140/80 mm. Hg. During the subsequent 10 minutes, blood pressure ranged spontaneously from 188/96 to 62/40 mm. Hg.

The piperoxan diuresis test was done on three occasions. The first test was invalidated by vomiting and an insulin reaction. At the second test, blood pressure fell to 82/32 mm. Hg immediately after the injection and shot up immediately to a range of about 200/120 mm. Hg, with subsequent wider fluctuations. The ratio between the volumes of the second and third collections was 2. The third test showed less fall in blood pressure than the second, but the ratio of the volumes of the second and third collections was 1.8. Bioassay of the urine for pressor amine indicated a content equivalent to 280 mcg. per 24 hours, the standard being levarterenol.

A large (about 150 gm.) nonmalignant pheochromocytoma was removed on June 3, 1956. In the immediate postoperative period, the diabetes became much easier to control, there were no insulin reactions, and the patient's blood pressure was persistently low. Three months postoperatively the glucose tolerance test was normal and all evidence of diabetes had disappeared. The experience in this case demonstrates the diagnostic value of the piperoxan diuresis test in a patient with severely fluctuant hypertension. The clinical state of this patient seems to correspond to that of a patient studied by one of us (A.C.C.) and described in detail by Goldner.[5]

2020 E. 93rd St. (6) (Dr. Corcoran).

Drs. E. N. Collins and Penn G. Skillern gave permission to report the case in the addendum.

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CENTRALIZED TREATMENT FOR SERIOUSLY ILL SURGICAL PATIENTS

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• *The critically ill surgical patient in some instances suffers from inadequate care because of the shortage of nursing personnel. Such patients should be segregated in an area staffed by specially trained personnel; the unit here described has one supervisor, graduate nurses, practical nurses, orderlies, a general duty aide, and a dressing room aide. One full-time surgical resident is assigned to it. The unit is built with certain features, such as glass partitions, that facilitate observation; it is also equipped with certain facilities that never leave this area. Records especially emphasizing the needs of such patients have been developed. Certain administrative problems, such as the selection of patients and their subsequent removal to regular quarters, have been solved satisfactorily. This arrangement guarantees expert care to those who need it most, relieves pressure in other areas, allows a more generous use of auxiliary help, and lightens the demand for private nursing care for the individual patient.*

With the increase in the number and complexity of surgical operations that are being performed, the time has come for a new look at the care of the critically ill surgical patient. This is especially true at this time, since we are faced with a critical shortage of trained graduate nursing personnel. In the zeal for training nurses and doctors and because of the necessity for scientific hospital programs, along with the emphasis on shorter hours of work, there is danger that the patient may become the forgotten man.

The definition of adequate care has ramifications that are far-reaching and embodies a vigilance and a degree of teamwork on the part of well-trained nurses, auxiliary personnel, house staff, and attending physicians heretofore not demanded. The care of the seriously ill surgical patient is a specialized duty and requires nursing skills that can be developed only by continued exposure to this type of problem. The careful attention to fluid balance records, gastrointestinal and thoracotomy tubes, pharyngeal suction, and other equally important facets of the postoperative period are well appreciated by both doctors and nurses.

Patients who have had operations of a less traumatizing type, such as routine herniorrhaphies, appendectomies, vein strippings, hysterectomies, and pilonidal sinus excisions, fare very well, providing they have received the benefits of a period of observation in a recovery room. However, patients who have been subjected to multivisceral procedures for cancer, cardiac or pulmonary surgery, or any difficult major operation imposed on an already physiologically disturbed situation need care that can be provided only on a unit adequately staffed with intelligent, well-trained personnel.

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Approach to the Problem

In the past, two methods have been employed in an attempt to solve the problem of inadequate care of the seriously ill patient. The first, a step in the right direc-

tion that should continue to be encouraged, has been the utilization of auxiliary personnel as practical nurses and hospital aides. The second is the time-honored use of a private duty nurse for those patients who need constant observation. The latter rules itself out automatically as a solution to the over-all problem, since, with the existing shortage, there are not enough such nurses to go around, even if the average patient could afford them, which he cannot.

The use of auxiliary personnel care is an accepted method of compensating for nursing shortage, but we must all realize that the graduate nurse will always be the key figure. However, on certain shifts it is common practice today to assign only one or two graduate nurses to a busy surgical unit, and much of their time is taken up with administrative duties, which makes it impossible for the critically ill patient to obtain the necessary care. The more efficient approach to the problem is to segregate all seriously ill surgical patients in a single unit that is staffed by personnel especially trained for the job. The care of this type of patient requires specialized training that is on a par with that of personnel assigned to an operating room team. It is, of course, important that their interests be in this realm and that they have the necessary background and motivation.

Another defect in the care of the hospital patient has been lack of cooperation between the various groups responsible for his care. This responsibility rests with the doctor, the nurse, and the administration. The doctor, who is held fully accountable for the patient's progress, has little to say about the planning of the care that his patient is to receive. It is obvious that unilateral planning by any one group not only is a mistake but in addition leads to unnecessary misunderstandings that are easily corrected when there is full cooperation of all concerned.

The philosophy of segregating all seriously ill patients in a single area to be cared for by specially trained personnel and cooperation in the planning of this care have an impact not only in this limited sphere but in the entire hospital and on the over-all problem of nursing shortage. The removal of this type of patient from the general wards sharply reduces the need for graduate nurses in those areas. It also practically eliminates the need for three private duty nurses to be assigned to a single patient.

Physical Facilities

The new Rhode Island Hospital, through the foresight of those concerned with its planning, has incorporated within it two adjacent wings on the same floor that are especially designed for the care of the type of patient under discussion; these are called the special care unit. This area differs from other units in that a nursing station is in the center of each wing in place of the standard nursing station at the base of the two wings. It also has a more liberal use of glass partitions, making it possible for practically all patients to be observed from the nursing stations. In all, there are 28 beds, 16 on one wing and 12 on the other, serving an average surgical census of 295 (127 general surgery patients and the remainder patients in the surgical specialities). The total bed capacity of Rhode Island Hospital is 627. Private rooms are available for those with terminal conditions or for those who would bother others. Sleeping quarters for a full-time resident, a laboratory, a minor surgery room, and a large dressing room are provided. On the same floor, adjacent to the unit, is a conference room equipped with a blackboard and conference table. This unit is on the floor directly above the operating room, which is considered important, since most admissions are from the recovery room, which is within the operating suite. Each bed is provided with a suction outlet, an oxygen device, and sphygmomanometer on the adjacent wall. An emergency switch is conveniently placed near each nursing station, and the signal is heard in the resident's quarters on the same floor.

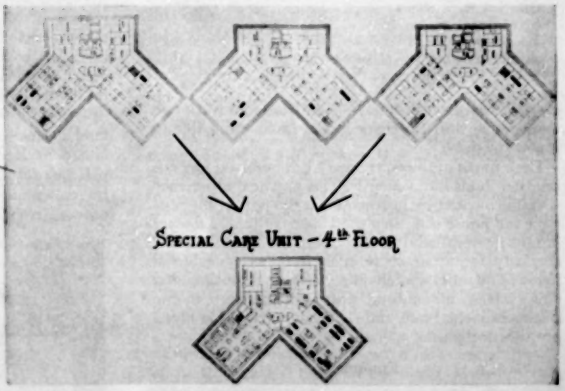

Fig. 1.—Graphic portrayal of consolidation of critical surgical patients on a special unit.

Staffing of Unit

At the present time the unit is staffed by one supervisor, two head nurses, nine other graduate nurses, eight practical nurses, four orderlies, one general duty aide, and one dressing room aide. One full-time surgical resident is assigned to this unit. He is usually at the second-year or third-year level and rotates through the unit for a three-month period. He is covered on his nights off by a surgical resident, who is rotating through one of the specialties, usually pathology. In the main, this coverage has been adequate, but it is not ideal. Due to the shortage of personnel, an ideal nursing complement of one nurse for every three or four patients is not available. However, it has worked out reasonably well except on occasions at night when two or more patients with serious problems have been

admitted. Since the basic philosophy of the unit is to provide specialized care at all times to patients who are seriously ill, a dictum of nonrotation of personnel has been followed. We consider this to be the most important feature of the program, and it provides a group who are familiar with the patients from day to day. It also has resulted in an almost unparalleled

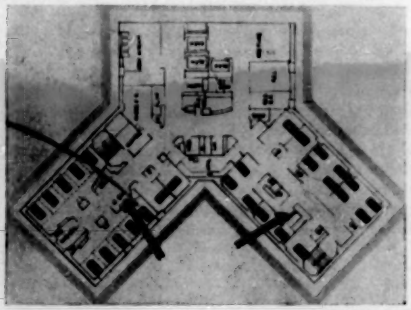

Fig. 2.—Architect's diagram of special care unit. Arrows point to centrally located nursing stations.

esprit de corps; nurses have been known to work two consecutive shifts to cover for an associate unable to report for duty.

Each nurse has been trained to draw blood and administer fluids intravenously. This practical experience is supplemented by instruction on the part of the resident and house staff. In a short space of time, a deeper insight is instilled into all personnel regarding the necessity for accuracy in such frequently neglected items as quantity and character of tube drainage, total daily intake and output, degree of moisture in the tracheobronchial tree, and significant changes in blood pressure and pulse.

Equipment

The interval of time between the onset of symptoms and the initiation of remedial measures in any emergency may be the determining factor in survival. For this reason, specifically listed stationary equipment never leaves the unit. The equipment includes a tracheotomy set, thoracentesis tray, paracentesis tray, adult's and baby's laryngoscopes, adult's and baby's cut-down sets, pneumothorax machine, lumbar puncture set, pneophore, incubator, in-bed scales (Acme), pharyngeal airways, baby's transfusion set, special drug tray, one-bottle and three-bottle chest suction apparatus, an aliquot of crystalloid and colloid solutions for intravenous use, oxygen administration outlets at each bedside, and various types of intestinal decompression tubes.

A standard, well-equipped laboratory is on the same floor, and, in addition to basic items for doing such procedures as complete blood cell counts, hematocrit determinations, and urinalyses, a microcentrifuge is provided, making it possible to do a microhematocrit determination within three or four minutes without doing a venipuncture. This is particularly useful in cases of massive upper intestinal bleeding or burns in which frequent hematocrit determinations are essential.

Records

Certain new forms have been drawn up to allow for consolidation of all pertinent data regarding the patient's status in any 24-hour period. These records are kept on a clipboard at the foot of the bed. On inspecting this clipboard, the first sheet seen is a standard temperature, respiration, pulse, and blood pressure sheet that is used throughout the hospital. The next form is a new fluid balance and burn sheet that is constructed in such a way that the intake and output are summarized every 8 hours and totaled every 24 hours ending at 7 a. m. A space is provided below this total for the recording of the amount of measured positive or negative fluid balance. The volume of fluid lost from emesis or diarrhea is estimated and recorded in the output column on each occasion. In the lower right-hand corner of the sheet, there is a line provided for the entry of the patient's weight in kilograms. When a patient is weighed, the resident-in-charge supervises, and the weighing is done at the same time and under the same conditions every morning. By utilizing the above information, one has a more accurate guide as to the status of the patient's fluid balance.

There are four columns on the right portion of the fluid balance sheet that are used to record the determinations for urinary specific gravity, chloride, and pH and for blood hematocrit and hemoglobin. The last column is reserved for determinations that may be ordered frequently throughout the day. The reverse

Fig. 3.—View from the nursing station looking across the corridor through glass partitions into two of the four-bed rooms. To the left is a single room. Immediately in back of the station is a two-bed unit with a door opening into the head nurse's cubicle. On her left is a four-bed unit. The beds within these rooms are visible from the nursing station without entering the rooms.

side of this sheet serves as the nursing note form. An effort has been made to simplify nursing notes. Many routine nursing procedures that were formerly charted have been discarded; only essential facts are recorded.

For those patients who present problems in electrolyte balance, a form was designed to represent graphically the fluctuations from one determination to an-

other. Different colors are used to denote each type of ion. With this chart it is possible to record accurately serum Na^+, K^+, Cl^-, and CO_2 findings on the particular day they were obtained. Such a sheet obviously would be needed only in exceptional cases. It is not intended to serve as more than a recording device to depict, in a more graphic fashion, fluctuations of serum electrolytes from their normal levels. The fact is stressed at all times that intelligent electrolyte therapy is predicated on a knowledge of the volume and source of fluid loss as well as the volume and content of administered fluids. Three horizontal columns have been incorporated at the bottom of this sheet in which the blood and plasma volume excess or deficit and blood urea nitrogen results may be recorded.

Two additional forms have been designed that aid in the recording of vital statistics of this unit. A special care sheet that summarizes the pertinent data regarding the patient's stay and course is printed on green paper and incorporated in the chart. This makes for ready identification of the chart in the record room. To insure against loss of records for statistical study, a large log book is kept on the unit. Upon the admission of a patient, the name and pertinent data relative to the patient are recorded. On discharge, the remaining data are entered by the resident in charge of the unit.

Selection of Patients

All emergency patients, such as those with active gastrointestinal bleeding or severe burns, may be admitted directly to the special care unit at the discretion of the resident-in-charge. All patients leaving the operating room who require special observation for variable periods of time, on the recommendation of the surgeon and the anesthetist, may be sent directly from the recovery room to the unit. As a rule, this has been anticipated, the units have been notified in advance, and the bed that the patient formerly occupied has been given up. The patient who has had a routine gastrectomy may remain in the unit for two or three days. Patients who have undergone heart or lung surgery may remain five to seven days. Those who have had certain types of gallbladder surgery may require one or two days of observation. Patients with severe burns frequently require more prolonged care. Some patients who are not necessarily critically ill but who are in potentially dangerous situations may be kept here for close observation. Those with chronic conditions are not admitted to the unit.

The resident-in-charge is vested with a considerable degree of authority in deciding when special care is no longer required. Since he is there at all times, he can best decide which patients may be moved to regular quarters. As a matter of courtesy, he is expected to speak to the visiting surgeon before actually moving his patient. The final decision regarding admission or discharge is vested in the chief of surgery, but so far this authority has not been exercised because of the fine cooperation of all surgeons, who have not abused the privileges of this excellent unit.

Administration of the Unit

Two committees have been organized that may be described as a higher and a lower echelon committee. The higher echelon includes the hospital director, the director of nurses, chief of surgery, and chief of anesthesiology. This committee functions when policy problems must be decided and also gives the much needed authority for the lower echelon, or working, committee. The lower echelon committee is made up of one member of the surgical service as chairman, one member of the department of anesthesiology, the senior surgical resident, the special care resident, the chief of the nursing service, the director of records, and one member of the administration. Every two weeks this committee makes rounds on the unit and holds a conference to ensure that the ideas and philosophy of the special care unit are being put into effect. At this time, a frank discussion is held so that any mistakes or differences can be rectified and suggestions made for improvements. Thus, we are able to meet at frequent intervals with persons from all departments that have to do with the care of the patient. Even after the short period of time that this system has been in effect, it is obvious that it is an ideal method for a more complete understanding of all people involved.

Summary and Conclusions

The shortage of nursing personnel has become a serious problem to the extent that, in many instances, the critically ill surgical patient is suffering from inadequate and inefficient care. Segregation of all critically ill surgical patients in a single area of the hospital staffed by nurses especially trained accomplishes the following things: 1. Expert care is guaranteed to those who need it the most. 2. The pressure is relieved in all other areas, lessening the need for graduate nurses and allowing for a more generous use of auxiliary help. 3. The demand for private nursing care for the individual patient is lightened. A special care unit at Rhode Island Hospital has been our method of converting this philosophy into actual operation. Our experience has convinced us that a special care unit for surgical patients is one solution to the serious nursing problem that faces us today.

154 Waterman St. (Dr. Beardsley).

Meconium Ileus.—Primary side-to-side ileotransverse colostomy and complementary proximal Witzel ileostomy is to be recommended in the treatment of meconium ileus. The more obvious advantages of this operation are as follows: 1. It is a single-stage procedure. 2. Immediate restoration of intestinal continuity is afforded. 3. Immediate decompression of obstructed intestine is permitted. 4. A means of irrigation is provided by which pancreatic enzymes may be used to liquefy and remove the obstructing, abnormal meconium. 5. No intestinal resection is done, nor does one seem warranted, considering that no lesion intrinsic to the intestinal wall exists. 6. There is reason to believe that the terminal ileum and right colon do not remain defunctionalized but rapidly take on their duties when the side-tracking anastomosis is no longer activated by distal obstruction. 7. The disadvantages of a double-barrelled skin ileostomy, no matter how brief and how minimized, are averted.—T. D. Throckmorton, M.D., and Philip M. Porter, M.D., Treatment of Meconium Ileus by Ileotransverse Colostomy, *A.M.A. Archives or Surgery*, June, 1956.

DIAGNOSIS OF CONGENITAL DYSPLASIA OF THE HIP IN THE NEWBORN INFANT

Sherman S. Coleman, M.D., Salt Lake City

• *Actual dislocation of the hip, with the femoral head lying completely out of the acetabulum, seldom exists at birth. It develops as a gradual process that should be watched for throughout the first year of life in every child. The possibility of recognizing at birth the dysplastic hips that will progress to subsequent dislocation was investigated by (1) examining 3,500 newborn infants specifically for skeletal deformities and (2) securing pelvic roentgenograms from 150 unselected newborn infants for a study of normal dimensions, averages, and ranges. It was found that in the newborn infant the usual physical criteria (such as unilateral shortening of the extremity) for the diagnosis of congenital hip dysplasia are inadequate and unreliable and that discrepancies between the clinical and x-ray findings (such as a high acetabular index) were distressingly frequent. Congenital hip dysplasia was diagnosed in 32 of the 3,500 infants. It is impossible as yet to tell which joints will become stable spontaneously, which will persist as subluxations, and which will progress to frank dislocations. Since the treatment is simple, it should be applied in all cases that suggest a hip dysplasia.*

The tragedy of late diagnosis of the sequelae of congenital dysplasia of the hip is apparent in any children's hospital. At the Primary Children's Hospital, I examined 3,500 newborn infants during a period of 10 months. This report presents my observations and conclusion that diagnosis of dysplasia of the hip in the newborn infant is possible in the majority of cases. Since it is common knowledge that the earlier the treatment can be instituted, the better are the results, it logically follows that, if the diagnosis can be made at birth, treatment could begin within hours or a few days thereafter. In order to make such a diagnosis, every newborn infant should be given "the dignity of one thorough orthopedic examination."

Each resident who has served at the Latter-Day Saints Hospital has recorded his observations on newborn infants under his care, and I have had access to their data. Thus, records covering more than 11,000 examinations of newborn infants have been available. In analyzing the statistics, it was observed that a wide difference existed from one year to the next in the number of congenital hip dysplasias reported. It became apparent that discrepancies existed, either in the method of examination, in the criteria for diagnosis, or in the terminology employed by different examiners. As the study progressed, further questions arose as follows: What is a dysplasia of the hip in the newborn infant? Can the diagnosis be made at birth? If so, with what degree of accuracy? Of what significance and how reliable is an x-ray examination of the pelvis at birth? Finally, how many dysplastic hips are passing unnoticed during the precious months of rapid and impressionable growth of the pelvis? An attempt has been made in this study to set forth criteria for the diagnosis of dysplasia of the hip in the newborn infant and also to suggest answers to these questions. It is hoped that it may contribute to the knowledge of dysplastic hip disease and provide an aid to those entrusted with the early examination and care of these children.

Definitions

Throughout this report terms will be used that require clear definition for the purpose of discussion. These are dysplasia, subluxation, and dislocation (luxation) of the hip. The term congenital hip dysplasia was introduced by Hilgenreiner [1] in 1925. It is a general term denoting, as Gill [2] described, delayed or defective development of the hip joint and its associated structures. In this regard, it may be considered a precursor to the clinical entities of subluxation and dislocation of the hip.

The terms subluxation and dislocation of the hip are used similarly to that outlined by Putti.[3] In a subluxated hip the cartilage of the acetabulum and the femoral head are in contact; however, there is an abnormal relationship between the two. The term hip dislocation (or luxation) refers to a condition in which the cartilage of the acetabulum and the femoral head are not in contact, and the head lies completely out of the acetabulum.

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Material and Methods

In the case of examinations covering 3,500 newborn infants, each was examined specifically for skeletal deformities existing at birth. With few exceptions, all infants whose physical examinations suggested the possibility of a congenital dysplasia of the hip had pelvic x-rays. Thus, a correlation between the clinical findings and x-rays in 27 cases in which there was presumptive diagnosis of dysplasia of the hip was made possible.

In order to establish more clearly the normal x-ray picture of the newborn infant, pelvic x-rays were taken of 150 consecutive newborn infants, unselected except on the basis of parental consent. The technique employed in making the x-ray picture was carefully designed, and I personally positioned and x-rayed each infant. As noted by previous investigators,[4] the position of the infant during radiography influences the x-ray picture; therefore, several infants were x-rayed in different positions and their measurements and findings were compared. This was done in order to determine the position that provides the most accurate and consistent results, with the least likelihood of error. The position agreed upon is basically similar to that employed in other studies. It is described and illustrated in figure 1. A true anteroposterior view of the pelvis is made, care being taken to eliminate possible errors from rotation, pelvic tilt, or parallax.

The acetabular index was then measured, and the values encountered in these otherwise clinically normal hips were recorded and the average value was computed. High and low values were also recorded. Additional observations were made concerning the integrity of Shenton's line, the depth of the acetabulum, and the relationship of the femoral neck to the acetabulum according to the "H" line. These observations are summarized in the discussion that follows. In all cases a correlation between the x-ray findings and the physical findings was recorded. In the 27 newborn infants with dysplasia of the hip, similar observations were made, and the data concerning their acetabular indexes were recorded. Nine premature infants were included in the study in order to compare the x-ray appearance of their pelves with those of full-term infants.

Observations

Physical Findings.—The criteria initially employed by me to establish the diagnosis of congenital hip dysplasia by physical examination were those usually listed. These included limited abduction of the flexed hips, increase in depth or asymmetry of inguinal or thigh skin folds, unilateral shortening of the extremity, palpable abnormalities about the hip, and Ortolani's[5] "sign of the jerk." A careful attempt was made to elicit each sign. As the investigation proceeded, it became clear that most of these findings were rarely present in any infant. The impression was gained that, in the newborn infant, the usual criteria for the diagnosis of congenital hip dysplasia are inadequate and unreliable. Most of the conventional signs are late developments, occurring secondarily to progression of the dysplasia into a subluxation or a true dislocation of the hip. An analysis of each physical sign, along with my observations, follows.

Significant persistent limitation of abduction of the flexed thigh in the newborn infant is uncommon, and when it is present it is difficult to evaluate early because so often it is equivocal. Almost all infants can easily abduct their thighs to 80 degrees, and in some they can be abducted well beyond 90 degrees. For evidence of hip dyplasia in the newborn infant, reliance simply on limitation of abduction of the hips gives the observer a false sense of diagnostic security. In only 3 of 30 cases diagnosed as dysplasia of the hips in this study, the infants exhibited limitation of abduction of the flexed thigh. In one of these it was equivocal. On the other hand, in three infants with the most pronounced dysplasias, the hips were capable of being abducted easily beyond 90 degrees. Well over one-half of the cases diagnosed by me were overlooked by the initial examiner because of the conspicuous absence of limited abduction of the hips.

In the newborn infant, absence of limited abduction in hip dysplasia is understandable. In the first place, the joint at birth is seldom truly dislocated*; rather, it is merely unstable, having either a capsule that is excessively lax or a socket of inadequate depth, or both. None of these conditions can logically explain limitation of abduction. In the average case of congenital dysplasia of the hip, it is usually as the condition progresses to a true subluxation or dislocation that persistent contractures of the adductors take place.[7] This is probably a gradual, insidious process and should be watched for throughout the first year of life in every child.

The skin folds of a newborn infant are difficult to interpret, and, even at best, asymmetrical skin folds are only suggestive. At birth there is a normal "springy" tightness of certain muscle groups, particularly the hip flexors. This tightness is often slightly asymmetrical. It is physiological during the first few weeks of life, and it can be traced in part to the flexed position of the hips in utero. Howorth[8] suggests that this infantile hip-flexion contracture is a phase in the normal development of the hip joint as it passes from the flexed to the extended position. Certainly such variable factors influence the formation of skin creases, making them

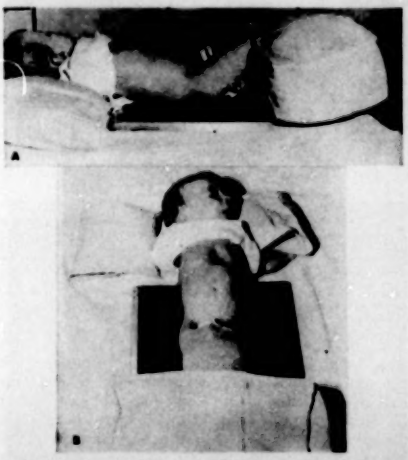

Fig. 1.—*A*, side view of infant in position for x-ray. Lower extremities are wrapped in an Ace bandage with patellae facing anteriorly. Legs are held in parallel alignment by means of pad between legs. Legs are placed on one sandbag 2 in. high, which allows controlled amount of flexion at hips. Another sandbag lies on top of legs to hold them firm. Each arm is restrained with a sandbag. X-ray tube is centered over symphysis pubis. *B*, front view, showing method of restraining infant and position of child on cassette. Rotation is the only variable to control.

diagnostically unreliable. In the presence of mild asymmetrical flexion contractures in the newborn infant, particularly in the absence of other findings, skin creases are virtually meaningless.

Regarding true unilateral shortening of the extremity, in this study, it was not discernible on any of the newborn infants having a diagnosis of dysplasia of the hip. The explanation for this again lies in the important observation that the hip joint is rarely dislocated at birth. At least this obtains in the cases not associated with multiple deformities of the type that Hass[9] and Badgley[10] call "teratological." It is true that complete dislocation of the hip has been reported in a 5-month fetus,[10] and a rare few cases are recorded of infants having dislocated hips at birth; however, in nearly every case of simple congenital dysplasia of the hip, the

femoral head is not dislocated in the newborn infant. Thus, true shortening of an extremity is rarely encountered at birth, and, by the same token, palpable abnormalities about the hip joint were not found except those incident to eliciting the "jerk of exit and entry."

The jerk of entry was described by Ortolani [8] in 1935. This consists of a palpable jerk incurred as the subluxated or dislocated hip is reduced into the socket by abducting the flexed thigh and levering the femoral

Fig. 2.—Method of examination. One hand steadies pelvis by firmly grasping knee (4) of one leg and exerting downward pressure on the flexed thigh. The other hand grasps the opposite extremity as follows: The fingers overlie the greater trochanter (2), and the thumb is placed over the medial aspect of the upper thigh near the inguinal crease (1). This provides firm grip on the proximal end of the femur. Employing the knee as a fulcrum (3), posterolateral force (arrow) is gently exerted on the upper end of the femur in an attempt to displace the femoral head.

head into the acetabulum. Following this procedure, if the thigh is adducted, the head slips out over the posterior acetabular rim, producing a jerk of exit. This sign is best elicited in the later months of infancy when the secondary signs of hip dysplasia, particularly early dislocation, have occurred. In the newborn infant, however, since dislocation or significant subluxation of the hip rarely exists, Ortolani's maneuver, as described above, cannot be performed. Rather, the reverse of this maneuver must be executed, that is, a jerk of exit must initially be sought.

This jerk of exit can be demonstrated as a very definite palpable and sometimes visible displaceability of the femoral head as it passes over the posterior rim of the acetabulum, into a temporarily subluxated position. It is not merely a snapping sensation. Many infant's hips exhibit palpable snaps with the slightest manipulation into the frog position, but it is likely that these are normal ligamentous and capsular phenomena. It was my observation that, in the newborn infant, the jerk of exit is the principal reliable physical finding that suggests a hip dysplasia. The displaceability can be elicited in most cases only if carefully sought. This requires a gentle, well-controlled attempt to displace the hip laterally or posteriorly; this was the technique adopted in this study. There is no undue force exerted, and no attention is paid to the commonly felt snapping phenomena. The hips are flexed and slightly abducted. The pelvis is fixed on the one side by vertical pressure on the thigh while the examiner gently tries to displace the femoral head on the opposite side (fig. 2). In order to be considered positive, palpable displaceability of the head of the femur must take place. As there is some variation in the ease with which the femoral head can be displaced, it is likely that the easier the displacement occurs, the more shallow is the acetabulum and the more severe the dysplasia.

The anatomic factors that may permit this to occur have been mentioned earlier. These are excessive laxity of the capsule and ligaments of the hip and unusual shallowness of the acetabulum, particularly its posterior portion. Howorth [9] suggests that capsular laxity is the principal fault that initiates the chain of events leading to dislocation of the hip. Ortolani,[11] on the other hand, found in studying three fetal dislocations at autopsy that deficiency of the posterior acetabular rim is the major fault. It is concluded from this study that both conditions play a role in the pathogenesis of hip dysplasia in the newborn infant. Capsular laxity is certainly not the only factor, as evidenced by the occasional infant in whom excessive hip-joint motion is exhibited but in whom there is no demonstrable displaceability of the femoral head. From observations in this investigation of exclusively clinical material, it is concluded that shallowness of the acetabulum, particularly its posterior portion, must be the principal defect in the newborn infant and that capsular laxity may or may not coexist. Evidence for this defect, in the form of displaceability of the femoral head from

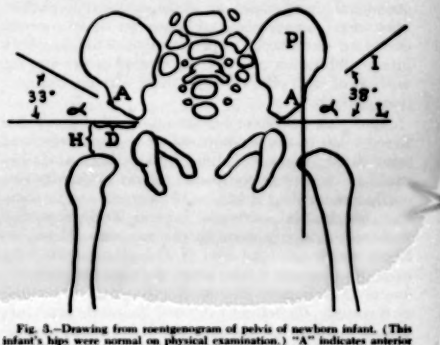

Fig. 3.—Drawing from roentgenogram of pelvis of newborn infant. (This infant's hips were normal on physical examination.) "A" indicates anterior inferior iliac spine; "L" is horizontal line of Hilgenreiner, drawn through comparable points on triradiate cartilage; "I" is line drawn parallel to acetabular roof; angle formed between "I" and "L" is acetabular index, a; "P" is Perkins' line, a perpendicular dropped through anterior-inferior iliac spine at right angles to "L"; "H" is distance between "L" and highest point on femoral neck; and "D" is distance between triradiate cartilage and intersection of "H" and "L."

the socket, must be sought for in every newborn infant by the maneuver described above. When present, a presumptive diagnosis of dysplasia of the hip can be made.

X-Ray Findings.—One of the distressing observations made early in the study was the discrepancy between x-ray findings and the clinical findings, this being particularly true concerning the acetabular index. This index is the angle that the slope of the acetabular roof

makes with a horizontal line drawn through comparable points on the triradiate cartilage (fig. 3). Hilgenreiner [1] drew attention to the possible diagnostic significance of this angle in 1925. Kleinberg and Lieberman,[12] on the basis of x-ray examinations of 23 newborn infants, concluded that an acetabular index above 30 degrees at birth suggested a potential dislocation of the hip. They also determined the average index to be 27.5 degrees. In this study of 300 clinically

Fig. 4.—Pelvic x-ray of newborn female infant having displaceability of the left hip on physical examination. Acetabular indexes are equal, being below average. Lateral disposition of left femoral neck is apparent, as is significant discrepancy in Hilgenreiner's "H" and "D" lines. In this case there is some alteration in Shenton's line on affected side.

normal hips, these values were not substantiated. Significantly higher values were obtained, showing that 30 degrees, rather than being the upper limit of normal, is about the average for newborn infants. Brewer [13] and others concur in this observation.

A wide range of measurements was recorded, varying from 20 to 42 degrees. The mean was computed at 30.86 degrees. The standard deviation was 3.8 degrees. Lower and upper limits of normal ranged from 23.3 to 38.5 degrees (95% of normal hips should fall within this range). The range of values and the number within each range of the 300 normal hips are as follows: 20-21 degrees, 2; 22-23, 5; 24-25, 24; 26-27, 25; 28-29, 44; 30-31, 68; 32-33, 53; 34-35, 54; 36-37, 14; 38-39, 9; 40-41, 1; and 42-43, 1. An interesting finding concerns the measurements of the acetabular indexes in nine premature infants, born between seven and eight and one-half gestational months. No significant difference was noted between the average indexes of these infants and those of full-term babies. In fact, the only difference was that the premature infants exhibited values more uniformly around 30 degrees. The range of values and the number within each range for these 18 hips are as follows: 24-25 degrees, 2; 26-27, 4; 28-29, 4; 30-31, 2; 32-33, 1; 34-35, 2; 36-37, 2; and 38-39, 1. The mean value was 30.2 degrees.

Additional observations were made relating to the sex of the infants and their height and weight. A slight increase in the average acetabular index was noted in females as compared to males. This was, however, not statistically significant. No reliable correlation could be drawn between the size of the infant and the acetabular index. This is understandable, for the acetabular index appears to be only a measure of the degree of ossification of the roof of the acetabulum. It does not necessarily reflect skeletal size.

Thirty babies were considered to have congenital dysplasia of the hip by physical examination. X-ray examinations were made of 27. Sixteen had bilateral dysplasias on physical examination; thus, there were a total of 43 clinically abnormal hips. The acetabular index was measured in each abnormal hip. The range of values extended from 28 to 49 degrees, and the average index was 36.5 degrees, showing that, in these abnormal hips, the average index was 6 degrees higher than values encountered in the series of normal hips. The range of values and the number within each range for 43 clinically abnormal hips are as follows: 28-29 degrees, 4; 30-31, 7; 32-33, 4; 34-35, 4; 36-37, 4; 38-39, 6; 40-41, 5; 42-43, 4; 44-45, 1; 46-47, 3; and 48-49, 1. On the basis of the values computed above on the clinically abnormal hips, it is noteworthy that only 14

Fig. 5.—Pelvic x-ray of newborn female infant in which displaceability of femoral head could be readily demonstrated bilaterally. Acetabular index on right is abnormally high; that on left is within normal limits. Hilgenreiner's "H" line is shortened, but equal bilaterally. Beak of femoral neck clearly lies lateral to vertical line of Perkins. Disruption of Shenton's line is equivocal.

out of 43, or 33%, exhibited values significantly above the normal range. The suggestion is, therefore, that the acetabular index shows diagnostic correlation in only one-third of the clinically abnormal hips examined radiographically.

In evaluating other radiographic features of the dysplastic pelvis of the newborn infant, variations were encountered but no single deviation was consistently found. Shenton's line is very difficult to ap-

praise accurately in the x-ray of a newborn infant, because the ossification centers are quite widely spaced and slight degrees of change in pelvic tilt have a marked influence on this line. Disruption of the line was apparent only in the most severely dysplastic hips, and the conclusion was reached that a disturbance of Shenton's line is not a reliable sign in corroborating the diagnosis of dysplasia of the hip in the newborn infant, except in obvious cases (fig. 4).

Hilgenreiner's measurements were performed on both normal and abnormal hips. These measurements consist of the H line and the D line. They are illustrated in figure 3. No numerical figures can be employed as diagnostic criteria, because differences in size of the child will influence them. Also, pelvic tilt alters the H line considerably. The only purpose for which these measurements can be validly used in the newborn infant is to distinguish an abnormal hip from a normal hip in the same infant. If the hips are bilaterally affected, as they were in 16 of 27 in this study, these measurements are not diagnostically significant (fig. 5).

The most frequent radiographic change seen in the abnormal hips was lateral disposition of the beak of the femoral neck in relation to Perkins' line. This is a line dropped perpendicularly from the most lateral point of ossification of the acetabular roof, a point that actually corresponds to the anterior-inferior iliac spine (fig. 3). This reference line was employed by Perkins [14] in determining the relationship of the femoral head to the acetabulum in older children, but, since the ossification center of the femoral head does not make its appearance until the infant is 3 to 6 months of age, it cannot be used as a reference point in x-rays in newborn infants. The beak of the femoral neck fell medial to Perkins' line with remarkable constancy in 300 clinically normal hips. In only one of these hips did the beak lie lateral to this line. Even this case was equivocal because of the indefiniteness of point of reference on the ilium. Contrasted to this, in 25 of 43 abnormal hips, or in 58.1%, the femoral neck was unequivocally lateral to this line. The significance of this observation appears to be a reflection of the approximate depth of the cartilaginous acetabulum. In this respect it is a more accurate criterion of the basic defect in the hip dysplasia in the newborn infant than is the acetabular index, or Shenton's or Hilgenreiner's lines, and it is of particular value in detecting bilateral dysplasias.

The x-ray examination can provide helpful information in many of these cases, but care must be exercised in its interpretation. The acetabular index alone is not helpful unless it is grossly abnormal. This study indicates that the acetabular index must be 40 degrees or above to be significant. The correlation between the physical examination and measurements of the acetabular index was disappointing, but some relationships were observed. Those hips that exhibited the greatest instability, as determined by femoral head displaceability, had the higher values. Conversely, those hips with very high values were nearly always unstable. Exceptions were not infrequent. In this study, one infant with a very unstable hip had an acetabular index below 30 degrees on the involved side (fig. 4). Furthermore, in those with unilateral involvement clinically, the opposite hip in some cases had the higher acetabular index. Similarly, Massie and Howorth [13] observed a frank dislocation at birth, yet the acetabular indexes were normal.

The failure of the acetabular index to correlate well with the clinical findings is understandable. It is reasonable to assume that the index is simply an indication of the state of ossification of the acetabular roof, providing only an angle or slope related to one portion of the socket. Even this does not correspond to the morphology of the cartilaginous anlage, as evidenced by the fact that the cartilaginous acetabulum at birth is of the same relative proportions as in the adult.[15a] The index does not provide a reliable indication of acetabular depth, particularly with respect to the posterior portion. The fact that elevated angles often occur in the distinctly unstable hips is consistent with, and is likely an indication of, a dysplastic process involving the entire acetabulum. However, if the posterior rim of the acetabulum is deficient, or if undue shallowness of the acetabulum alone is present (either of which may exist in these unstable hips), then the indexes may well be perfectly normal.

Correlation of Physical Examination and X-Ray Findings.—It is possible to correlate these physical and radiographic findings and thereby delineate certain criteria to establish the diagnosis of dysplasia of the hip in the newborn infant. In correlating the x-ray picture with the physical findings, it must be made clear that a normal x-ray appearance of an infant's pelvis does not necessarily rule out a congenital hip dysplasia. This obtains particularly in the presence of displaceability of the femoral head. This study indicates that x-ray examination of a newborn infant suspected of having a dysplastic hip is corroborative in about 70% of cases, the corroborative criteria being either an acetabular index above 40 degrees and/or lateral disposition of the femoral neck in relation to Perkins' line. The latter is more consistently accurate. However, if neither of these signs is present in the face of a clinical diagnosis of dysplasia of the hip in the newborn infant, the x-ray means nothing.

Criteria for Diagnosis

It is proposed that a diagnosis of congenital hip dysplasia in the newborn infant can be established if any of the following conditions are met: (1) lateral or posterolateral manual displaceability of the femoral head (jerk of exit), with an otherwise normal pelvic x-ray; (2) an acetabular index of 40 degrees or more without demonstrable displaceability of the hip; (3) lateral disposition of the femoral neck by x-ray examination, in the absence of demonstrable displaceability of the hip, and with or without an elevated acetabular index; (4) persistent and unequivocal limited abduction of the flexed thigh, with or without abnormal x-ray changes; or (5) any combination of the above. The integrity of these criteria for diagnosis is difficult to prove, but, in the final analysis, their proof is rather academic. If, with these criteria, 10 hips were treated unnecessarily, I would feel that treatment were justified if, in retrospect, it could be determined that only one hip actually warranted it. A "wait and see" policy is not justified.

Incidence of Dysplasia of the Hip

In the current study the above criteria were employed and a diagnosis of congenital dysplasia of the hip was made in 32 of 3,500 examinations. Thirty were diagnosed clinically, and two were detected on the basis of an acetabular index above 40 degrees on a routine x-ray. This amounts to about one in every 110 births. Of these cases, 27 were in girls and 5 in boys, a female sex predominance of about 5 to 1. This sex ratio compares favorably with that reported in other studies on congenital hip dislocations. Although these statistics reflect a higher incidence than is usually reported in the United States, the incidence closely approaches that in Russia, where an incidence of 1% is reported.[16] Contrasted to this, in Italy nearly one newborn infant in 10 is claimed to have dysplasia of the hip,[3] and Slavik [17] states that 20% of newborn infants in Czechoslovakia exhibit some form of congenital hip dysplasia.

The type of birth, whether cephalic or breech, was also noted. Of 3,500 births, there were 125 breech deliveries. In this group, three dysplastic hips were found, making an incidence of 2.4% in breech presentations. Whether or not this difference is statistically significant is problematical, but it appears that unstable hips occur somewhat more than twice as often in breech as in cephalic deliveries. The reason for this is obscure.

From the data presented in this study, provided that the criteria for diagnosis are acceptable, it is apparent that a significant number of these abnormalities pass undiagnosed at birth in every hospital. Failure to diagnose some of these cases at birth is certainly within human error, but failure to recognize that the diagnosis can be missed is negligence. It is necessary that every child be repeatedly examined for this condition throughout the first year of life, for the subtle changes that might pass undetected at birth may gradually, over a period of months, be manifest in a true dislocation.

The tragedy of overlooking a complete congenital dislocation of the hip until the age of walking is almost matched by the tragedy of undiagnosed subluxations of the hip. These later cases may not be detected until the ages of 30 or 35 years, at which time the dysplasia has provided the groundwork for a far-advanced and disabling osteoarthritis of the hip joint (fig. 6). The number of cases of potential coxa magna that pass through our pediatric clinics unnoticed can only be conjectured, but Putti [3] has determined that 40% of all cases of osteoarthritis of the hip, in his experience, could be traced to these unrecognized and untreated hip subluxations.

Conclusions

The practical importance of the early diagnosis and treatment of congenital dysplasia is obvious to all who deal with this condition. At the same time, it is common knowledge that a significant number of these dysplasias become stable spontaneously, with no treatment at all. Yet, it is impossible to determine beforehand, at least with any degree of accuracy, which of them will heal, which will persist as a subluxation, and which will progress to a frank dislocation. As simple as the treatment is, it is obligatory to treat all patients with findings that suggest a hip dysplasia. Past experiences have shown that the majority of these patients treated early are restored to normal within a few months.

Congenital dysplasia of the hip joint is a dynamic process that, untreated, does not stop at birth. Although it can be diagnosed at birth in the majority of cases, the process may be so obscure as to go undetected until one, two, or three months later. This is no tragedy, provided that it is recognized that it can occur. Certainly every practitioner is charged with the obligation to examine and reexamine each infant under his care at regular intervals from birth to the walking period in an endeavor to detect any signs of existing dysplasia of the hip joint. In the earliest months, those infants showing signs that suggest this diagnosis should be treated without delay; to postpone treatment on the feeble excuse that a roentgenologist has reported the

Fig. 6.—*A*, x-ray of left hip of 32-year-old woman in 1949. Hip abnormality illustrated was an incidental finding on an anteroposterior view of pelvis taken for low-back pain. The patient had spondylolisthesis, and at that time there were no complaints referable to the hip. There is clearly a mild extrapelvic protrusion of femoral head. *B*, x-ray of same hip taken six years later in 1955 because of patient's complaints of aching and stiffness in left hip. Notice progression of extrapelvic protrusion and development of moderately far advanced osteoarthritic changes. These alterations must surely be traceable to a congenital dysplasia of the hip, unrecognized during infancy and childhood.

child's pelvis to be normal cannot be justified. Finally, it is only by lowering the age at which treatment can be started that improvement in the results of congenital dysplasia of the hip can be realized. If the age can be so lowered that the majority treated are newborn infants, then significant progress in the treatment of congenital dysplasia of the hip shall have been attained.

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Dr. A. M. Okelberry gave permission for use of figure 6.

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OLD PROBLEMS AND NEW CHALLENGES IN MEDICAL EDUCATION

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• There is need for continuous revision of curriculum, techniques, and methodology in medical education. Examples of current problems are the increasing amount of specialization, the decreasing number of patients who are wards of the public, and the chaotic state of postgraduate education. Programs instituted in the name of correlation and integration must be reexamined often to make sure that the intended results are achieved. Teaching and research are copartners when they are well balanced, but teaching must not be allowed to become an incidental matter, for research in itself cannot supplant the need for continuous study and preparation for teaching. The recruitment of basic scientists has become an important administrative problem. No single formula will solve all these problems, but it is important to remember that medical education involves the teaching of individuals who are destined to care for other individuals, and that its prior task is to inspire.

"Times and men and circumstances change about your changing character with a speed of which no earthly hurricane affords an image. What was best yesterday—is that still the best in this changed theater of tomorrow? Will your own past truly guide you in your own violent and unexpected future?" These words written by Robert Louis Stevenson aptly portray this dynamic, exciting, and uncertain period of history and suggest the eternal challenge of preparing to meet the needs of today and of the tomorrow that lies ahead. No phase of human endeavor can be described as static in the current scene. The ever increasing scientific knowledge associated with these changes in "time and men and circumstances" has made many traditions, tools, and techniques adequate and effective yesterday now inadequate and obsolete in meeting the challenges of today or in preparing for those of the future.

The past half-century has witnessed enormous advances in scientific knowledge applicable to medicine, which have been reflected by significant changes in medical practice. They have necessitated marked readjustments in medical education. No one can be clairvoyant in regard to the future when knowledge is advancing at such an unprecedented rate. An effort to discuss and reemphasize some of the challenges in medical education that lie ahead may seem almost foolhardy when events are taking place with such acceleration. Old problems present new angles, and new challenges appear on every side. My position is somewhat like that of a student in one of Prof. William Lyon Phelps' classes some years ago. At the end of a pre-Christmas examination, this student handed in a paper on which he had written, "God only knows the answer to this question. Merry Christmas." Professor Phelps returned the paper with the notation: "God gets an A; you get an F. Happy New Year."

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Background Preparation

Some of the problems giving concern to medical educators today are more fundamental than the problems of medical education itself. They extend into the area of education prior to admission to medical school and include the question as to just what constitutes the most desirable background preparation. A quarter of a century ago, emphasis was well nigh exclusively directed toward the scientific aspects of premedical education, almost to the point of exclusion of social sciences and the humanities. Since physicians deal with people and should be in the best possible position to understand them, many educators in the field of medicine felt that a more balanced educational background was needed. This soul-searching resulted in a gradual swing of the pendulum toward the concept of a broad, general education as the most desirable background for a physician.

Such a background is a highly desirable possession for any individual regardless of his sphere of activity. However, at the present time, when scien-

tific advances are being made more rapidly than ever before in history and when a solid scientific knowledge is more important than ever, there is also increasing concern over those areas of education that do not fall under the classification of the natural sciences. Just what is meant by a broad, general education? Just how significant is breadth unless there is also a degree of depth? How can the background of the student preparing for medicine be adequately scientific and also include a broad interest in and full appreciation of the socioeconomic facets of human interrelationships? How can we avoid the type of premedical pattern that would tend to stereotype background preparation for a field that offers such a variety of opportunities as are inherent in medicine?

Undoubtedly, one of the keys to this dilemma lies in the development of better intercommunication and closer cooperation between those responsible for medical education and those responsible for preparing students for it. Individuals advising and guiding potential medical students through their college years will be in a position to be of maximum assistance if they fully appreciate the objectives of medical education and the background experiences deemed most helpful in achieving them. It would seem that medical educators have a direct challenge to assist in bridging this academic gap more effectively to the mutual advantage of all concerned.

Undergraduate Education

At the turn of the century, the basic objective of undergraduate medical education was to prepare the student to enter practice. Today, the basic objective of undergraduate medical education is to aid the student in laying the foundation upon which he may build further experience, directed toward certain goals, prior to the initiation of practice. Thus, undergraduate medical education currently plays the role of partial, rather than total, preparation for professional life. How can this partial preparation be made most effective so that it will serve as a suitable foundation for the area of practice, teaching, or research that its possessor will subsequently develop?

This age of specialization has been described by some serious writers as an age of isolation marked by competition between specialists who tend to maintain a laissez-faire attitude toward others. Such an attitude, in turn, lessens the sense of obligation to cooperate and, at times, seems to foster an unwillingness to share in the complex problems of a total group. Sometimes specialists, while working to the best of their ability and aiming at the optimum performance of their own tasks, may find that their actions are determined by thinking and action that are unrelated to each other. I would be willing to offer a substantial wager that every dean has encountered situations of this type in the course of his routine administrative responsibilities. How, in any one given situation, can responsible medical educators overcome this facet of specialization that it has helped to create? This is important if the basic foundation that is to be erected during undergraduate medical education is designed so that its partial role in the total development of the physician will be of maximum value, regardless of the ultimate direction of practice, teaching, or research. What is the best way to coordinate an educational experience in specialist environment so as to develop an educational opportunity that will not lack human and social direction? How can educational programs in medicine be planned so as to offer an all-embracing opportunity for the development and full appreciation of the medical and social problems of patients and maintain intellectual, emotional, social, and technological components in reasonable balance? What are the best approaches in a given medical school environment to insure the development of and to maintain the teamwork necessitated by specialization and avoid the trend toward the increasing impersonalization inherent in fragmentation? These are questions of serious nature that require study, planning, and suitable action if the partial role of undergraduate medical education is to be made the substantial foundation for graduate and continuing medical education that it should be.

Traditional Patterns in Education

Questions such as these can be answered and the problems they raise solved only if there is broad, general faculty appreciation of institutional objectives and the interdigitating functions of various departments in achieving them. Today, when knowledge is advancing so rapidly, there is need for constant study and almost continuous revision of curriculum, techniques, and methodology. However, tradition in medical education, as in many other areas, at times becomes a matter of real concern in efforts to make needed readjustments. Some individuals and some groups seem to forget that tradition is man made and that it should constantly be reevaluated and adhered to or discarded in line with fundamental common needs. Basically, there is nothing so good that it cannot be improved. Although there is much that is good in tradition and many traditions should be steadfastly cherished and fostered, they should not be permitted to stand in the way of sound progress. Years ago Nietzsche observed, "Every tradition grows more venerable—the more remote is its origin, the more confused that origin is. The reverence due it increases from generation to generation. The tradition becomes holy and inspires awe." Arnold commented, in more picturesque fashion, that he was "well satisfied that if you let in but one little finger of tradition, you will have in the whole monster, horns and tail and all."

The point in question is that traditional patterns in curriculum planning and the associated educational techniques and methods are difficult to readjust unless those who are charged with the responsibility of their organization and supervision are fully aware of the factors that require modification in light of the constantly changing scene. No one person in a medical school setting can effectively accomplish the creation of a new pattern for the over-all group. Only a representative group, cognizant of all facets of total curriculum

content and with clear-cut objectives, can keep a medical curriculum dynamic and reasonably balanced. Additive material to be included within restricted time allocations necessitates intelligent alterations and subtraction of outmoded or less relevant data. During recent years additive material has accumulated at a rate more rapid than can be counterbalanced by the simple process of deletion alone. This necessitates consideration of ways and means whereby time allocations devoted to excessive or unessential detail may be modified in favor of developing sound concepts of general principles. However, the understanding of general principles necessitates certain basic factual knowledge.

Every responsible medical educator, therefore, constantly encounters the challenge in his own field as to the determination of what constitutes essential factual information and how it can best be utilized to aid in the development of the sound knowledge, understanding, and judgment desirable in the physician. This is where intelligent imagination assumes an importance almost as great as that of knowledge. Whitehead has pointed out, "Knowledge does not keep any better than fish," and that in "successful education there must always be a freshness in the knowledge dealt with." He furthermore indicates, "The properly trained man has some hope of obtaining an imagination disciplined by detailed facts and necessary habits," and this certainly should be one of the basic goals of sound medical education.

Correlation and Integration of Teaching

During recent years much has been said about correlation and integration of medical teaching. A good deal is being done in the name of correlation and integration that falls far short of actually accomplishing such results and tends to reduce the significance of these terms. Genuinely effective correlation and integration also necessitate full appreciation and understanding of the things that are being brought together as well as comprehension of the objectives being sought. Efforts along these lines require an open-minded approach to problems and a willingness to make effective adjustments without compromise on quality or achievement of objectives. Unless these efforts are designed to develop a better educational mousetrap and give fair promise of doing so, nothing of material value is accomplished. Some facets of medical education correlate or integrate with ease and effectiveness, while others present difficult and perplexing enigmas that almost defy other than isolated approach. Correlation and integration of certain aspects of medical education are means whereby some of the problems mentioned earlier in this discourse may be approached as well as effectively solved. However, no faculty should delude itself into the belief that such efforts are simple, for they involve careful background planning, discussion, and supervision when activated. The easiest and laziest way is to side-step such efforts and teach in the splendid isolation of specialization. This more traditional approach is time consuming, involving a great deal of duplication of effort on the part of both teachers and students that can ill be afforded.

Flexibility in Departmentalization

One of the major academic challenges and problems today is, therefore, to determine "how to make the ancient rigid framework of departmentalization serve the purpose of medical education in its true relation to biology and the basic sciences." [1] The challenge extends into the area of overcoming this rigid framework through reasonable flexibility or through the creation of a new framework susceptible to flexibility. Unfortunately, it is necessary to keep in mind that "broad philosophies are one thing, and pedagogic expedients another." It is stimulating to observe the increasing cooperation that is currently under way between departments in medical schools and between medical schools and other areas of academic discipline. The rigid framework of departmentalization has of necessity become more flexible with the realization that, in the current setting, no departmental discipline is sufficient unto itself. Basic sciences spill over into each other's domains and into almost every facet of clinical activity. Honest appraisal of any departmental discipline demonstrates that, if it were to be stripped of the knowledge contributed by other departments today, there would be little remaining but a ghost of the past.

Teaching and Research

Teaching and service were the two major component functions of medical education in the United States during the early years of the current century. There was little evidence of any real effort to advance knowledge in the majority of the medical schools of that period. However, at the time of the first serious survey of medical schools by the Council on Medical Education of the American Medical Association, one of the 10 criteria used to evaluate institutions rested in determining whether or not faculty members had made or were endeavoring to make original contributions to knowledge through research. Today, experimental investigation, or research, is universally recognized as one of the three major activities of a medical school. Deitrick and Berson [2] indicated that research "is the principle means by which the medical school fulfills its fundamental obligations for the advancement of knowledge." Research today necessitates a considerable portion of the faculty time in most institutions and has been associated with increasingly large financial support.

It is hardly necessary to remind you that teaching and research are co-partners where they are well balanced and each given its due emphasis. Actually, investigation in a research project and good medical practice are fundamentally kindred in spirit, method, and objective. In facing his responsibilities, the physician encounters the same type of challenges that confront the scientific investigator. Each patient is an individual presenting a problem that must be studied and analyzed, submitted to rational therapeutic procedures, and then followed to the point of satisfaction with the result of such analysis, conclusion, and action.

Physicians have need of the same type of alert, systematic, thorough, and critically open-minded approach that characterizes the research scholar. A medical school whose faculty personnel are not actively seeking answers to the myriad of unsolved problems confronting them would hardly be worthy of its name and would furnish a dull environment for both teacher and student.

Research, however, is a term that has been handled in recent years almost as loosely as coordination and integration and has played an even greater role in determining how faculty personnel utilize their time. The importance of research, with its potential and increasing impact on medicine as well as on human welfare, can be readily appreciated by surveying the procession of discoveries and the subsequent application of this knowledge that has occurred in recent years. It was to be anticipated, with the glamour and potential values now associated with the word research, that conflicts would inevitably arise in medical schools involving problems of balance between research and teaching functions. There is no denying the fact that in numerous instances research has overshadowed the total activities of some individuals with teaching responsibilities to the point where the latter have become an incidental rather than a major matter of concern. This is not in the best interests of medical education, for research in itself cannot supplant the need for continuous study and preparation for teaching. It cannot replace the lack of supervision when it becomes so time consuming that it sidetracks teaching responsibilities. It is important for medical faculties to remind themselves that the primary function of a medical school is to offer the learning opportunities and environment needed in the basic education of a physician. Good teaching, therefore, is of paramount importance; good teaching balanced with good research on the part of the faculty greatly enhances educational potential. The shirking of teaching responsibilities in the pursuit of research, real or fancied, cannot be condoned in the individual charged with teaching as a major obligation. This merely emphasizes that these two important functions of a medical school must each be given their due recognition and emphasis in keeping with the personnel, facilities, and financial resources available to the institution.

Problems of Administration

The problems and challenges that confront responsible administrators in this fascinating field of medical education become increasingly numerous and more complex as the scene changes. Those that have been presented represent only a few of the broad issues confronting all schools today. One matter of increasing concern lies in the relative dearth of manpower in the basic medical sciences. Recent years have witnessed the development of many new fields of scientific interest that are competing for top caliber youthful intellect. Economic competition for well-qualified young basic scientists has developed that is difficult for medical schools and their parent universities to meet effectively. Within medical schools themselves, there has been increasing competition for the basic scientists through their increasing utilization in clinical research programs. This increased utilization of the basic scientists in clinical investigation is to be highly commended and further encouraged. However, it is important that opportunities for teaching and research as well as economic reward be of such nature within the basic science areas themselves that they may remain virile and dynamic through attracting and retaining adequate personnel as well as through the development of personnel to meet needs in these other fields. Recruitment of personnel in these fields presents the administrative challenge of meeting more effectively some of the economic aspects of making such careers more attractive.

As has been indicated earlier, the rapidly changing socioeconomic pattern during recent years has had great impact on medical practice and has necessitated significant readjustments in both undergraduate and graduate medical education. The day is not long past when the great reservoir of patients ordinarily involved in medical education and training fell within the group of individuals known as wards of the public. In those days, most private patients or patients who covered part of their cost were considered as unavailable in a medical education program. Prepaid insurance and welfare programs have changed the traditional setting drastically in a relatively short period of time. The philosophy of medical education has of necessity undergone tremendous readjustment, necessitating recognition and acceptance of the fact that any and all categories of patients are suitable and available for participation in medical education programs if they are properly indoctrinated into its meaning and significance by their physicians. Thus, there is increasing incorporation of the private patient into undergraduate and graduate medical education in most institutions. Trends are sufficiently well established so that the time may not be far distant when all institutions must adapt their programs so as to utilize effectively the potentialities of the private patient and patients covered by one form or another of prepaid insurance.

Graduate and Postgraduate Education

This trend has, however, created problems in certain fields of graduate medical education that are not easy to solve effectively. How, for instance, is the surgical resident to receive preparation through the assumption of increasing responsibility on a service consisting primarily of private patients? Where does responsibility lie in such a situation, and how can it be solved to the mutual satisfaction of the patient, the resident, and the responsible residency supervisor? Answers to problems of this nature are being furnished in various ways in different institutions. The impression is gained that the need for working out satisfactory solutions to problems of this type has been beneficial in many ways, as it tends to curtail independent, unsupervised responsibility. The effective solution of problems of this nature actually holds promise of improving rather than weakening graduate education in the long run.

Medical education falls into the three phases of undergraduate, graduate, and postgraduate or continuing education. Medical schools, while having as their primary concern the undergraduate education of the physician, have gradually become more deeply involved in graduate and postgraduate education. The residency and fellowship programs currently leading to completion of requirements for possible certification by specialty boards have been initially developed around the teaching hospitals affiliated with medical schools. The medical school–teaching hospital partnership must constantly review its role of responsibility in association with these programs leading to specialty certification. Are they properly balanced? Are the resident experiences adequately varied? Is there need for affiliation with other institutions to create an adequate total experience? Is there need for reevaluation of some of the current requirements for specialization in certain areas? Has time in terms of months or years become a fetish, rather than emphasis being on content and quality of programs and inherent competency of individuals? The changing socioeconomic setting, along with the changing body of scientific knowledge, thus will continue to necessitate study and readjustment of this phase of medical education.

While undergraduate and graduate medical education have called on medical schools to the extent of their ability and become increasingly meaningful, postgraduate medical education in medicine has developed largely by indirection. Faculties, facilities, and financial resources of medical schools have limited their ability as well as their interest in engaging in this increasingly important field. This has resulted in much wasted effort through lack of careful planning, interinstitutional or regional cooperation, and needless duplication. Postgraduate medical education today can best be described as chaotic. Sober reflection cannot fail to emphasize that, in this dynamic and rapidly changing period, continuing education in medicine is an ever-increasing necessity. Furthermore, serious analysis of the possible producer of postgraduate medical education opportunities inevitably focuses upon the medical school–teaching hospital axis in cooperation with medical societies and other organizations sponsoring educational efforts in this field. If schools more effectively accept this increasingly meaningful challenge, there is serious and demanding planning ahead. Postgraduate medical education, to be fully effective, requires an appreciation of the needs of the consumer as well as an approach pattern for a student whose requirements differ considerably from those in undergraduate and graduate medical education. What are the needs if medical schools help to fulfill the challenge in continuing education from the standpoint of personnel, facilities, and finances that will make it possible to meet the mounting challenge in this area?

Conclusions

"Times and men and circumstances" will continue to change with accelerating rapidity in the years ahead. I have endeavored to point up problems, old and new, as well as some of the challenges they present. Few answers have been suggested, for these must be developed by the men and women devoted to furthering the cause of medical education in the particular setting in which they live and work. No single formula will adequately solve any one of these challenges in the various settings in which they are encountered. Developments are taking place too rapidly today, however, to permit these problems and challenges to go unsolved by default through lack of awareness or procrastination. The responsibilities of medical educators have grown rapidly in recent years and have become increasingly complicated from almost every angle. In meeting these challenges, it is important to remember always that medical education, whether undergraduate, graduate, or continuing, involves the teaching of individuals who are destined to care for the problems and needs of other individuals. In working out educational problems, leaders in this field can be well guided by Sir Richard Livingston's comment that "the prior task of education is to inspire, and to give a sense of values and the power of distinguishing in life, as in lesser things, what is first rate from what is not."

535 N. Dearborn St. (10).

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Long-Term Survivals in Cancer.—The 14 cases presented illustrate one point: certain individuals treated for cancer may have unexpected and unpredictable longevity. Long-term survivals are occasionally encountered in patients with untreated cancer. . . . Cases of spontaneous regression of histologically proved primary cancers or metastases have been recorded. Recurrence after many years without clinical evidence of disease is not uncommon. Even more interesting are cases in which known metastases remain quiescent and yet, when the patient dies of unrelated causes many years later, these deposits appear to be unchanged histologically. In other patients, periods of growth of the tumor may alternate with periods of quiescence if not actual regression. . . . It should be emphasized that these 14 cases have been chosen as rather typical examples that may occur in any physician's experience, and are not the bizarre cases that may be found in the files in any large medical center. Furthermore, all cases have been histologically proved and the diagnosis confirmed. . . . The lymphomas, the chronic leukemias, and breast cancer are notorious for their vagaries in natural history. Recently these neoplasms have been used in programs of endocrine and chemotherapy evaluation. Considerable caution must be used in interpretation of the results. Transitory periods of remission and retardation of tumor growth may occur spontaneously with concomitant improvement in the clinical condition. . . . The enthusiasm of the investigator in reporting cancer regression following the use of new drugs or new therapeutic methods does not replace statistical evaluation of a significantly large series of cases observed over an adequate period of time. Significant prolongation of useful life must be shown to occur before a therapy can be classified other than palliative. The wide variations of survival in treated and untreated cancer, the late recurrences and spontaneous regressions, and the alternating periods of growth and quiescence that seem to occur in the course of many tumors, should caution the physician against making either a too optimistic or unduly pessimistic prognosis.—L. F. Craver, M.D., and J. A. Finkbeiner, M.D., Long-Term Survivals in Cancer, *The Medical Clinics of North America*, May, 1956.

CLINICAL NOTES

CARDIAC MONITOR FOR SURGERY AND RESUSCITATION

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Cardiac arrest, ventricular fibrillation, and profound shock demand immediate diagnosis during surgery or resuscitative emergencies so that proper and adequate treatment can be instituted.[1] This requires a reliable portable instrument for continuous instantaneous monitoring of the cardiac impulse during surgery and for immediate application during nonsurgical emergencies both in and outside of the hospital. Recognition of this need prompted us to develop a simple, compact, portable transistorized device, which provides an immediate diagnosis of cardiac arrest, ventricular fibrillation, and certain other arrhythmias. It allows continuous visual monitoring of the heart rate, even during profound shock, when the patient may be clinically pulseless. The use of transistors and small batteries makes the unit small, lightweight, and portable. It is explosion-proof because of the low-voltage power supply. Nurses, technicians, and even nonmedical rescue personnel can operate it readily because of the simplicity of design and interpretation. In addition, it is sufficiently inexpensive to be made available for even small hospitals and rescue squads.

The cardiac monitor (fig. 1) is housed in a 6 by 5 by 4 in. aluminum case that is equipped with a carrying handle. The total weight is 3 lb. The power supply consists of four standard-sized 1½-volt flashlight cells. Since the device operates with very little drain on the power supply, the batteries will last for about one year of normal use. Standard electrocardiograph electrodes are strapped on the flexor surfaces of each forearm. These pick up the cardiac impulse and feed it into the input sockets. This input is amplified by a multiple-stage transistor circuit and is indicated on a D'Arsonval galvanometer. Amplification is sufficient to give full-scale deflection if desired. Controls consist of amplitude and fidelity knobs. A phone jack is provided should it be desirable to feed the output into a recording device or headphones.

Use of the Cardiac Monitor

The cardiac monitor has been used satisfactorily on a large series of patients during various surgical procedures. In order to test its response during sudden cardiac arrest and ventricular fibrillation, it has also been used on normal mongrel dogs in whom these conditions were induced by intravenous injections of potassium chloride. Its use was also studied in a patient in severe shock secondary to massive hemorrhage. For use on dogs, as well as for emergencies in the field, subcutaneous needle electrodes are used in place of standard electrodes.

Normal Response.—Under normal conditions, the galvanometer needle shows a uniform, pulsatile deflection of constant amplitude from whatever base line it is set at (fig. 2*A*). This corresponds to the major wave of depolarization that occurs immediately before contraction of the ventricular muscle and is comparable to the QRS complex seen on an electrocardiogram. It is observed in normal hearts without arrhythmias. When ventricular extrasystoles or other arrhythmias are present, the rhythmicity of the oscillations will be correspondingly altered, as will be the amplitude. The trained eye can easily detect this.

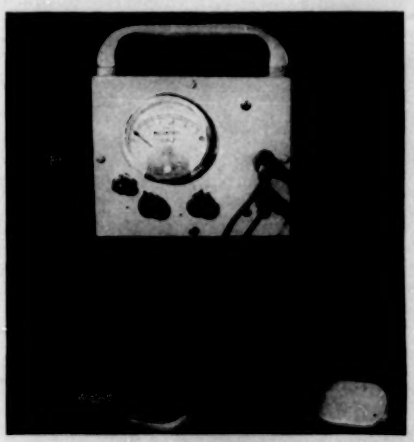

Fig. 1.—The cardiac monitor.

Cardiac Arrest Due to Asystole or Standstill.—In cardiac arrest due to asystole or standstill, such as might occur during surgery or resuscitative emergencies, there is a cessation of movement of the galvanometer needle, indicating immediately the absence of electrical activity of the heart (fig. 2*B*). When this occurs, and if the operator is sure that the monitor is attached and operating properly, it always indicates a cardiac arrest.

Shock or Peripheral Vascular Collapse.—During extreme shock or peripheral vascular collapse, where blood pressure and pulse amplitude may fall to dangerously low and sometimes imperceptible levels, as might occur with severe hemorrhage or asphyxia, the amplitude of deflection of the galvanometer needle is essentially normal (fig. 2*C*). The cardiac monitor is especially useful in this situation, since it provides accurate information that the heart is still functioning even though the blood pressure and pulse may not be

From the radioisotope, surgical, and medical services, Veterans Administration Hospital.

detectable clinically. This should prevent unnecessary opening of the chest for cardiac massage and other measures. The observer can initiate other measures to return the blood pressure to normal without loss of valuable time in trying to assure the correct diagnosis.

Ventricular Fibrillation.—During ventricular fibrillation, the heart muscle loses its power of effectual contraction and the various bundles beat independently and asynchronously in a fascicular type of activity. This results in failure of ejection of blood from the heart, with absence of pulse and blood pressure. During ventricular fibrillation, the galvanometer needle of the cardiac monitor produces very small, irregular, and highly erratic oscillations, completely lacking any rhythmicity. The baseline (isoelectric line) wanders throughout the range of the dial. Here again, the cardiac monitor duplicates the electrocardiographic pattern (fig. 2*D*).

Comment

The cardiac monitor was developed to allow continuous, instantaneous visualization of the electrical activity of the heart as an aid to the surgeons and anesthesiologists in a large general hospital. The device would be of even greater value in the small hospital or for use during dental anesthesia, when a qualified anesthesiologist is less likely to be available. The small size, portability, and self-contained power supply of the monitor suggest its use in ambulances and by police and fire department rescue and resuscitation squads in cases of drowning, electrocution, vehicular accidents, and severe injury or illness. In civil disasters or combat situations, the availability of the monitor would facilitate sorting of living from dead casualties and resuscitation and treatment under very adverse conditions.

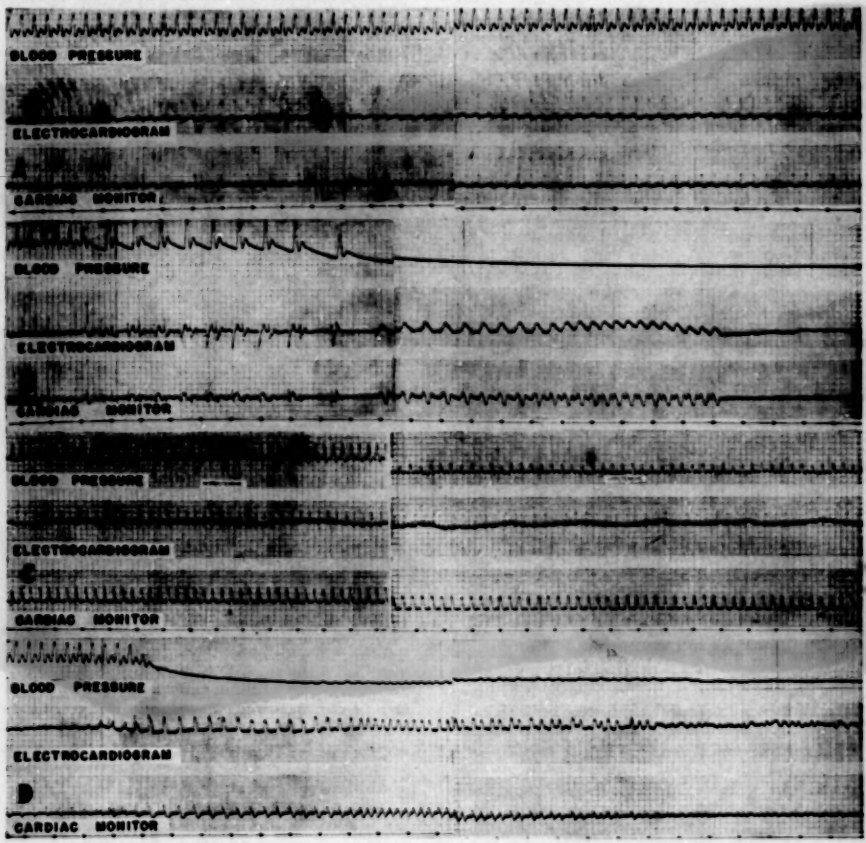

Fig. 2.—Indication by cardiac monitor of, *A*, normal sinus rhythm; *B*, cardiac arrest; *C*, hemorrhagic shock; and *D*, ventricular fibrillation.

Summary

The cardiac monitor is a portable, battery-powered electronic device for monitoring the electrical impulse of the heart. The amplifier is a multiple-stage transistor circuit, the output of which feeds a milliammeter and a headphone. Under normal conditions, and in cardiac arrest, shock or peripheral vascular collapse, and ventricular fibrillation, the monitor gives a characteristic, diagnostic response.

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STUDY OF RESPIRATORY LIVER METABOLISM IN SURGICAL PATIENTS

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The usual liver-function studies coupled with needle biopsy of the liver have been valuable in appraising liver disease. They permit an accurate appraisal of the pathology without an exploratory operation, and frequently they avert an unnecessary surgical procedure. Yet, the occasional poor correlation between the laboratory and pathological reports serves as a constant stimulus to develop new methods of research or to reapply older techniques for further biological information. Direct physiological tests on liver tissue have been used for many years in experimental work on small animals; however, relatively little work has been done on the respiratory metabolism of the human liver. The frequency with which liver biopsy specimens are taken at the operating table for pathological examination, and the benignity of the procedure, have prompted us to send a portion of our specimens to both the pathologist and the physiologist.[1] To our knowledge, at the start of this study, in 1952, oxygen quotient studies had never been reported on human liver.

As the Gillmans [2] and Waterlow and Patrick [3] have pointed out, in the study of altered metabolic regulation it is better to concentrate on dynamic processes rather than to measure metabolites of tissues. A study of tissue enzyme activity would appear to help us to get nearer to a basic understanding of the problem. In 1954, Waterlow and Patrick [3] reported their progress with enzyme studies on fatty liver in infants. Various enzyme systems were investigated in their series, and there was a suggested reduction in cholinesterase and succinoxidase activity in fatty liver tissue.

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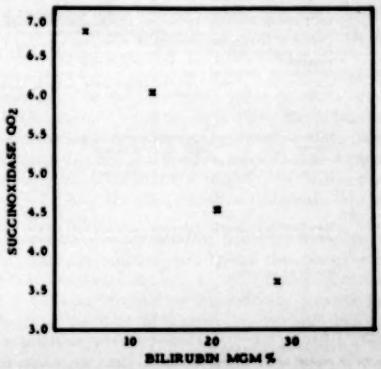
Method

The 10 patients used in this study were undergoing surgery for gallbladder, colon, or pancreatic disease or peptic ulcer; 4 patients with obstructive jaundice had liver-function studies in the course of their preoperative evaluation. Wedge biopsy specimens weighing approximately 1.5 gm. were removed from the liver edge in 10 patients and placed into a precooled sterile container. The specimen was then immediately sectioned, weighed, and placed in the Warburg apparatus for oxygen determinations. The oxygen consumption was determined by the direct Warburg procedure on slices, with Krebs-Ringers succinate as the substrate.[4] Oxygen consumption was expressed as QO_2, or the number of microliters of oxygen consumed in one hour by 1 mg. (dry weight) of tissue. Biopsy specimens were taken early in the operative procedure to avoid a factor of prolonged anesthesia and shock. Both general and spinal anesthesia were used. Concomitant liver sections for histological study also were made for most of these individuals.



Liver succinoxidase QO_2 and serum bilirubin levels in four patients with obstructive jaundice.

Results

There was no increased morbidity referable to the liver biopsy performed at the time of laparotomy. The six patients with grossly normal livers underwent subtotal gastrectomy in five instances, and one had a resection of the transverse colon. The histological examination of liver biopsy specimens, available in four of these patients, suggested no functional liver pathology. The oxygen consumption, expressed as QO_2, varied from 4.74 to 8.86 in these six cases (average 6).

Three patients in this series underwent palliative surgery for malignancy at the head of the pancreas; another patient had common-duct stones with obstructive jaundice. Each patient showed hepatic derangement, both by histological examination of the liver and by the liver-function studies. Their QO_2 determinations varied from 3.63 to 6.79 (average 5.3). The patients with the highest bilirubin levels had the lowest QO_2 values (see the table and the figure). How-

ever, surgery was frequently performed considerably after the bilirubin determination had been done, and, therefore, all bilirubin values could have been higher at laparotomy. The patient with the most severe liver damage died on the ninth postoperative day in hepatic and adrenal failure.

Comment

The presence of succinic dehydrogenase in tissues was discovered by Battelli and Stern,[5] who noted that, when succinate was added to certain tissues, the oxygen uptake was markedly increased and malic acid was produced. More recent work has shown that the catalytic dehydrogenation of succinate is the result of the action of succinic dehydrogenase, cytochrome-C, and cytochrome oxidase.[6] The components of this reaction are referred to as the "succinoxidase system." Succinic dehydrogenase is found in bacteria, molds, insects, and most tissues of vertebrates that have been tested. Schneider and Potter [6] determined the activity in heart, kidney, liver, brain, skeletal muscle, spleen, lung, and Jensen sarcoma of the rat.

Several reports have appeared on the correlation of changes in activity of the succinic dehydrogenase of various tissues with changes in the function of these tissues. The activity in the rat embryo liver increases rapidly during the late embryonic and early postnatal life and reaches the adult level within 15 days after birth.[7] The activity is much lower in rat hepatoma than in normal liver, i.e., the activity in liver tumors is about one-fourth that in normal liver.[8] Meyer found that the activity in the functional corpus luteum of the ovary during pregnancy is two and one-half times greater than in the nonfunctional diestrous corpus luteum.[9] Studies of this type provide the basis for insight into the mechanisms of specialized physiological processes. The activity of succinic dehydrogenase in various kinds of tissues has been studied by determining the rate of reduction of methylene blue and by the measurement of oxygen uptake in the presence of the cytochrome system. By the use of the reaction mixture of Schneider and Potter for optimum activity,[6] the enzyme is made the limiting factor in the system and the oxygen uptake is a measure of the maximum activity of the dehydrogenase.

Findings in Ten Surgical Patients on Whom Respiratory Liver Metabolism Studies Were Done

Date	Diagnosis and Operation	Type of Anesthesia Before Liver Biopsy	Finding on Microscopic Examination of Liver Biopsy Specimen	Liver-Function Tests	QO_2
1/14/53	Peptic ulcer (duodenal); gastric resection	Continuous spinal, intravenous; 10 mg. tetracaine (Pontocaine) hydrochloride, 1/150 grain (0.4 mg.) scopolamine	No examination	None	4.78
1/21/53	Cancer of transverse colon, gastric polyp; resection	Continuous spinal, intravenous; 5 mg. tetracaine, 50 mg. meperidine, 1/300 grain (0.2 mg.) scopolamine	No examination	None	4.86
1/28/53	Obstructive jaundice, cancer of head of pancreas	Intravenous, inhalation; 0.25 gm. thiopental (Pentothal) sodium, cyclopropane	Obstructive jaundice	12/31/52: icteric index 93 units; cephalin flocculation 2+; alkaline phosphatase 25 Bodansky units, thymol turbidity 2.6 units/100 cc.; serum bilirubin 13 mg (van den Bergh direct 6.6, indirect 6.4), cholesterol 1,087 mg., cholesterol esters 80 mg./100 cc.	6.17
2/ 6/53	Duodenal ulcer; gastric resection	Intravenous, inhalation; 0.5 gm. thiopental, 60 units curare	Hemosiderosis	None	6.08
2/ 9/53	Common-duct stone; common-duct exploration	Spinal, intravenous; 10 mg. tetracaine, 50 mg. meperidine	Hemosiderosis; obstructive jaundice	1/28/53: sulfobromophthalein retention 47.5% after 45 min.; icteric index 28.9; cephalin flocculation 4+; alkaline phosphatase 20 Bodansky units, thymol turbidity 2.2 units/100 cc.; serum bilirubin 3.35 mg. (van den Bergh direct 2.5, indirect 1.65), cholesterol 208 mg./100 cc.	6.79
2/10/53	Marginal ulcer; gastric resection	Intravenous, inhalation; 0.5 gm. thiopental, 60 units curare, cyclopropane	Hemosiderosis	No liver-function studies; total serum proteins 7.8 gm., with 4.29 gm. albumin and 3.51 gm. globulin/100 cc.	4.74
2/12/53	Obstructive jaundice, cancer of pancreas	Continuous spinal; 4 mg. tetracaine	Obstructive jaundice	2/11/53: Urine 4+ for bile, negative for urobiligen; icteric index 122; cephalin flocculation 4+; alkaline phosphatase 53 Bodansky units, thymol turbidity 2.2 units/100 cc.; total serum proteins 6.6 gm., with 3.5 gm. albumin and 3.1 gm. globulin/100 cc.; serum bilirubin 27.7 mg. (van den Bergh direct 16 mg.), cholesterol esters 64 mg./100 cc.	3.63
2/16/53	Chronic duodenal ulcer; gastric resection	Continuous spinal; 6 mg. tetracaine	Hemosiderosis	None	6.45
2/18/53	Peptic ulcer; gastric resection	Continuous spinal, intravenous; 10 mg. tetracaine, 100 mg. meperidine, 1/150 grain scopolamine	Hemosiderosis	None	8.88
3/16/53	Cancer of head of pancreas	Intravenous, inhalation; 0.5 gm. thiopental, cyclopropane	Obstructive jaundice	3/2/53: icteric index 112; cephalin flocculation 1+; alkaline phosphatase 14.7 Bodansky units, thymol turbidity 1.3 units/100 cc.; serum bilirubin 20.8 mg. (van den Bergh direct 14.3, indirect 6.5) cholesterol 469 mg., cholesterol esters 135 mg./100 cc.	4.48

This pilot study was undertaken in an effort to determine whether direct physiological studies on human pathological tissues would be practical and informative. While voluminous reports are available on lower animals, this approach to the study of pathological physiology has been neglected in man. The succinic dehydrogenase enzyme system was selected because of the relatively high QO_2 readings that could be anticipated. The many other enzyme systems and methods of studying cellular activity provide numerous avenues for future research.

To date, oxygen-quotient studies do not appear to be practical from a clinical diagnostic standpoint. The limitations of in vitro studies are immediately apparent. It is not possible to state the normal QO_2

values for human liver from this small series. Normalcy, in the true sense, must be judged by normal liver-function tests and normal histological appearance. Samples from the liver edge may not be truly representative of the entire organ, although deep and superficial samples do not show any significant consistent changes in the cell count and appearance in our studies in dogs.[10] Waterlow and Patrick found the average oxygen-quotient value of succinoxidase in infants to be 4. Our QO_2 values were approximately 6 when averaged on six male adults. Another group with obstructive jaundice had slightly lower readings. This material is presented in the hope that it will stimulate interest in the possibilities of tissue physiology. Enzymatic investigations are now being extended to the study of experimental and clinical cirrhosis; the effect of anesthesia, anoxia, shock, and ischemia of the liver; and the effect of acute and chronic obstructive jaundice. Specimens from patients with acute and chronic hepatitis have not been available, for these patients rarely come to laparotomy.

Summary

Liver succinoxidase, oxygen-quotient, (QO_2) determinations were made on 10 patients undergoing upper abdominal surgery. Values suggested slight impairment of in vitro activity of the enzyme system in the presence of obstructive jaundice in comparison to apparently normal liver. The concept of performing direct physiological studies on human tissue is believed to be of possible value just as it has been in laboratory animals. The clinical physiologist could well fill some of the gaps in our understanding and assessment of problems of altered metabolism.

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Virgil Moon, M.D., and Robert B. Thomson, M.D., reviewed the pathological material for this study.

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DIRECT-VISION INTRACARDIAC SURGERY FOR PULMONARY STENOSIS

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In the past, cases of pulmonary stenosis have been surgically corrected by variations of the Brock[1] procedure, with instrumentation through the right ventricle to open the stenosed pulmonary valve. Swan[2] has demonstrated by postoperative cardiac catheterization studies that a valvulotomy so performed may be inadequate and responsible for failure of reduction of right ventricular pressure as compared to those performed by the open method through the pulmonary artery with the patient under hypothermia.

We have attempted to ensure an adequate valvulotomy by the use of direct-pressure measurements taken in the right ventricle and pulmonary artery at the operating table both before and after the valvulotomy in order to evaluate the effectiveness of the technical maneuver and adequacy of the opening.[3] If sufficient equalization of the two pressures on opposite sides of the pulmonary valve failed to occur, further attempts were made to open the pulmonary valve until the pressures approximated each other. By following this practice we were able to increase the number of satisfactory results, and in the presence of pure valvular pulmonary stenosis this appeared adequate.

It was not always possible, however, to determine the exact intracardiac lesions by the preoperative cardiac evaluation studies. In some instances, instead of a valvular stenosis an infundibular stenosis was found at the time of surgery in close proximity to the pulmonary valve; in others, we relieved a valvular stenosis only to find later that there was an additional infundibular stenosis present; and in still others a valvular stenosis was relieved only to be followed by the untoward pulmonary complications of an associated ventricular septal defect. Consequently, there are situations where direct visualization of the pulmonary outflow tract during surgery is not only desirable and advantageous but also mandatory.

There is no question that a stenosed pulmonary valve can be opened better under direct vision than by blind instrumentation. This is especially true in the treatment of infundibular stenosis, in which the closed techniques are even more unsatisfactory. With the use of heart-lung machine, oxygenation and sustained circulation can be maintained during open cardiotomy. This allows direct vision of the entire ventricular chamber valves, and septums. The congeni-

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tally stenosed diaphragm representing the pulmonary valve can be retracted into the field of vision and opened, and new valve cusps can be fashioned. An associated infundibular stenosis can be easily excised. An associated ventricular septal defect, if present, is readily apparent and in turn can be adequately closed. Similarly, the atrial septum can be explored, and, if a defect of this septum is present, it too can be closed. Consequently, at the termination of the procedure a better operation has been performed; additional defects have been corrected, if present; and later complications such as pulmonary hypertension from an undetected ventricular septal defect have been avoided.

The operative findings present in the first five patients operated on with use of our heart-lung machine lend support to the above opinions (see table). Three of these patients had additional defects that had not been apparent preoperatively but that were easily detected and corrected under direct-vision surgery. The pump oxygenator employed during operation on these first five patients consisted of a rotating disk oxygenator in conjunction with a Sigmamotor pump. A Lauck pump is being substituted at the present time. The description of this machine and the experimental data will be the subject of a separate report.

Findings in First Five Patients Operated On

Case No.	Diagnosis, Preoperative	Found at Surgery
1	Valvular pulmonary stenosis	Valvular pulmonary stenosis
2	Valvular pulmonary stenosis Ventricular septal defect	Valvular pulmonary stenosis Ventricular septal defect
3	Valvular pulmonary stenosis	Infundibular pulmonary stenosis Ventricular septal defect
4	Valvular pulmonary stenosis	Valvular pulmonary stenosis Infundibular pulmonary stenosis Ventricular septal defect
5	Ventricular septal defect	High ventricular septal defect Low ventricular septal defect

The main argument against the employment of direct-vision open cardiotomy is the possibility of a higher operative mortality, at least initially. We are in full agreement that extracorporeal circulation should not be employed until the operators are thoroughly versed not only with its experimental use but also with the technical problems associated with intracardiac surgery in patients. The machine in itself is only one of many factors that must be considered for success. There was one death among the first five patients, in the fourth one operated upon. This patient had severe cardiac malformations consisting of a valvular pulmonary stenosis, an extensive infundibular stenosis, and a large ventricular septal defect. It is felt that this death was not due to the use of the pump oxygenator with open cardiotomy per se but rather to the patient's severe underlying cardiac problem. He did well during the period of cardiac bypass perfusion but developed multiple cardiac standstills, necessitating massage after the thoracotomy incision was closed. The other four had their defects corrected and made an uneventful recovery.

Conclusions

The development of the pump oxygenator not only enables the cardiac surgeon to perform operations within the open heart under direct vision more effectively than heretofore possible with blind techniques but also permits him to detect and correct additional abnormalities that might otherwise remain undetected.

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ISOLATION OF JAPANESE B ENCEPHALITIS VIRUS

REPORT OF A FATAL CASE IN AN AMERICAN SOLDIER RETURNED FROM KOREA

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and
Lieut. Col. Trygve O. Berge (MSC), U.S. Army

References to only three cases of Japanese B encephalitis occurring in persons in the United States after arrival or while en route to this country from epidemic centers in the Far East have been published.[1] From none of these was the isolation of the virus reported. To our knowledge, this is the first case of Japanese B encephalitis in the United States in which the etiological agent has been recovered.

Report of a Case

Present Illness.—A 22-year-old enlisted man was admitted to the U. S. Army Hospital, Fort Lawton, Wash., on Sept. 13, 1954, complaining of fever, retro-orbital pain, and headache of two days' duration, not relieved by acetylsalicylic acid, acetophenetidin, and caffeine (ACP) capsules or other medication. On the previous day, the patient had nausea and was hospitalized aboard ship after three episodes of vomiting. There were no cramps or diarrhea, nor was there any difficulty in urination.

History.—The patient had been with an ambulance company located at Chunkok, Korea, north of the 38th parallel, from Feb. 12 to Aug. 25, 1954. From Aug. 26 to Aug. 31, 1954, he was attached to a replacement depot at Pusan in southeastern Korea. On the latter date, he departed from Pusan for the United States on a military transport. Prior to the onset of the present illness, 11 days after boarding ship, he had been in perfect health. The patient denied any recent respiratory infection, cough, or sore throat. The history contained no mention of any insect bites.

Physical Examination.—On his admission to the hospital at Fort Lawton, the pulse rate was 118 per minute with regular rhythm. The temperature was 100.6 F (38.1 C) and the blood pressure, 138/70-62 mm. Hg. The ear, nose, and throat examination was

From the Sixth Army Area Medical Laboratory, Fort Baker, Calif.

negative. The chest was clear to auscultation and percussion. The heart was of normal size, and no murmurs were audible. The abdomen was scaphoid, and the liver and spleen were not palpable. There was no tenderness. All deep and superficial reflexes were equal and symmetrical. The admission diagnosis was idiopathic hemorrhagic fever.

Course in Hospital.—On the evening of Sept. 13, the temperature was noted to have ranged between 102 and 104 F (38.9 and 40 C) during the day. There was bilateral conjunctivitis and

Fig. 1.—Photomicrograph showing perivascular cuffing with lymphocytes.

marked photophobia. The patient had become markedly confused. The pulse rate had fallen to 72 per minute. Respirations were 14 per minute, the temperature 102.4 F (39.1 C), and the blood pressure 140/70 mm. Hg. Nuchal rigidity and bilateral enlarged axillary lymph nodes were noted. The patient could move all extremities. The face was flushed. The attending physician felt that the diagnoses of choice were encephalitis or poliomyelitis. At 9 p.m. the patient complained of chills and continued retro-orbital headache. The temperature rose to 104.8 F (40.4 C). On Sept. 14 the temperature remained elevated, rising to 105.6 F (40.9 C). Mental processes slowed. The patient was unable to retain fluids. No petechiae were seen on the skin. The blood pressure was stable at 125/60 mm. Hg. Photophobia was marked. There were no changes in the nuchal rigidity or deep reflexes. The pupils were equal, but the fundi could not be examined because of the patient's inability to cooperate. At 3:20 a. m., Sept. 15, the patient was comatose and frothy sputum was seen in the mouth and nose. Wet rales were audible in the axillas. He was placed in a high Fowler's position, and tracheal suction and oxygen administration were instituted. The right pupil was dilated to 5 mm. Respirations were 24 per minute and laboured. The blood pressure was 170/110 mm. Hg. The apical heartbeat gradually became weaker, and the patient died on the fourth day after the onset of illness. The final clinical diagnosis was acute encephalitis, possibly of Japanese B virus etiology, with terminal pulmonary edema.

Laboratory Findings.—On Sept. 13 the hemoglobin level was 14.5 gm. per 100 cc. and the white blood cell count 15,500 per cubic millimeter, with 89% neutrophils, 6% lymphocytes, 4% monocytes, and 1% basophils. The urine had a specific gravity of 1.034, was amber in color, had an acid reaction, and contained a trace of albumin, amorphous urates, and sediment. A blood culture was negative. Roentgenograms of the chest were negative. On Sept. 14 the urine contained 20 to 25 white blood cells per high-power field. The spinal fluid contained 407 cells per cubic millimeter, with 29% polymorphonuclear leugocytes and 71% lymphocytes. The spinal fluid protein level was 57 mg. per 100 cc., with no increase in globulin. Another blood culture taken on this date was negative.

Gross Pathological Findings.—An autopsy performed nine hours after death revealed a well-developed male about 22 years of age weighing 185.5 lb. (84.1 kg.) and measuring 70 in. (177.8 cm.) in length. The external examination was not remarkable. The head and neck, thyroid, and mediastinum were within normal limits. The right lung weighed 840 gm. and the left, 720 gm. The cut surfaces revealed marked pulmonary edema and vascular congestion. The heart weighed 400 gm., and the valves and musculature were normal in appearance and measurements. The coronary arteries showed moderate atherosclerosis. The liver weighed 2,000 gm. and on cut section showed moderate edema. The gastric mucosa was moderately congested. The small intestine was minimally dilated without evidence of volvulus or paralytic ileus. The fecal matter in the large intestine was green and fluid in character. The spleen weighed 250 gm. and exhibited moderate congestion of the parenchyma. The pancreas was not remarkable. The combined weight of the adrenal glands was 14.9 gm. They showed minimal lipid depletion. The right kidney weighed 220 gm. and the left, 230 gm. The cut surfaces showed

Fig. 2.—Photomicrograph showing microglial nodule and degenerating neurons (within and outside the lesion).

diffuse congestion. The genitourinary organs were otherwise normal in appearance. The brain weighed 1,520 gm. The convolutions were slightly flattened and the parenchyma mildly edematous. There was moderate congestion of the superficial vessels. No petechiae were noted in the gray or white matter. There was no obstruction in the ventricular system.

Microscopic Pathological Findings.—Sections of the lung revealed marked vascular congestion and protein-rich edema fluid within the alveoli containing numerous red blood cells and

macrophages. The heart and aorta showed no significant findings. Liver sections showed marked congestion of the sinusoids, particularly around the central veins. The spleen sections revealed engorgement of the red pulp with blood. No significant findings were seen in the pancreas. Sections of the kidneys showed congestion of the glomeruli and of the blood vessels in the cortex and medulla and minimal cloudy swelling in the cells of the convoluted tubules. Multiple sections of the brain and spinal cord revealed widespread focal necrosis throughout the cortical gray matter and white matter, with infiltrations of

TABLE 1.—*Summary of Complement-Fixing Titers with Indicated Antigens Against Japanese B and St. Louis Encephalitis Guinea Pig Antiserums**

	Tested Serums: Titers		
Antigens	JBE (Nakayama)	SLE (Hubbard)	Normal Serum
Isolated virus	1:128	1: 64	<1:32
JBE (Nakayama)	1:128	<1: 32	<1:32
SLE (Hubbard)	1: 32	1:128	<1:32
Normal mouse-brain ..	<1: 32	<1: 32	<1:32

* Abbreviations: JBE, Japanese B encephalitis; SLE, St. Louis encephalitis.

lymphocytes and polymorphonuclear leukocytes. There was phagocytosis of ganglion cells, particularly prominent in the area of the olivary body. Satellitosis was noted in a few areas. There was diffuse cuffing of the blood vessels with round cells (fig. 1) but no perivascular hemorrhages within the parenchyma, although present in a few areas in the meninges. Small focal areas of necrosis were present in the cerebellum, but there was no dissolution of the Purkinje cells. In areas throughout the brain, a moderate glial proliferation was noted. Focal destruction of ganglions was seen in the basal nuclei. Within the spinal cord, areas of degeneration were noted with no singular localizing phenomena, although many were in the area of the anterior horn cells. There was some glial proliferation accompanied by infiltration with round cells and polymorphonuclear leukocytes (fig. 2). In general, the focal areas of necrosis were seen throughout the motor cortex, basal ganglions, cerebellum, and spinal cord.

Isolation and Identification of Virus

Specimens of brain tissue and pectoralis major muscle were received in the frozen state for virus isolation attempts. Portions of spinal cord received in a separate container were found to have thawed en route. Portions of all tissues were ground in sterile 10% solution of skim milk, in a proportion of 10% by weight. After centrifugation to remove gross particulate matter, each suspension received 250 units of penicillin and 250 mg. of streptomycin per milliliter. Bacteriological cultures of the suspensions in thioglycollate broth showed no evidence of viable organisms. Groups of newborn white mice (1 to 3 days of age) were inoculated with 0.01 ml. intracerebrally and 0.03 ml. intraperitoneally of the respective tissue emulsions. Young weaned mice (21 days) received 0.03 ml. intracerebrally. In addition, 6-day-old chick embryos were inoculated with 0.1 ml. amounts of the various suspensions by the stab method.

No agent was recovered either from the muscle tissue or from the spinal cord material in mice or in embryonated eggs in the original passage attempts. Blind passages were not made. Five of eight newborn mice inoculated with cerebral tissue, however, showed signs of illness on the fourth postinoculation day and were killed for passage. The remaining mice were moribund on the sixth and seventh days. Adult mice inoculated with the same material showed signs of illness first on the sixth day, followed by definite paralysis and death on the eighth and ninth days. A single mouse survived the first passage observation period of 28 days. Cultures of brain material from killed mice were bacteriologically sterile. The same human brain emulsion inoculated into six-day embryonated eggs produced death of the embryos on the fourth to the sixth day. This line was not continued, since the agent appeared to produce disease readily in mice.

The agent was established in second mouse-brain passage by inoculation of 10% solution of infected brain suspension intracerebrally from suckling mice into new groups of newborn and young adult mice. All of 28 newborn mice showed spasms on the third day after inoculation and were killed for seed virus and antigen preparation. Young adult mice showed ruffled fur and a hunched position on the third day, at which time one-half of the mice were killed. The remaining mice died on the fourth and fifth days.

Antigen for virus identification by the complement-fixation technique was prepared from infected mouse brains harvested three days after inoculation. Brains were ground in sterile saline solution to a concentration of 20% by weight and stored overnight at 5 C. The emulsion was then centrifuged at 2,000 rpm for 30 minutes; the supernatant fluid was drawn off and again centrifuged in the cold for 30 minutes at 10,000 rpm. Aqueous merthiolate was added to the high-speed supernatant to a final concentration of 1 in 10,000 as a preservative, and the supernatant was employed as a complement-fixing antigen in box titrations against Japanese B encephalitis (JBE) and St. Louis encephalitis (SLE) guinea pig immune serums. The results are summarized in table 1. Results, while suggestive, were inconclusive, because of the marked cross reaction with both JBE and SLE antiserums.

TABLE 2.—*Identification of Isolated Virus as Japanese B by Intracerebral Neutralization Tests with Known Guinea Pig Immune Serums*

	Dilutions of Virus						Logs Neutralized
Tested Serums	10^{-5}	10^{-6}	10^{-7}	10^{-8}	10^{-9}	LD_{50}	
Normal rabbit	6/6*	6/6	4/6	2/6	0/6	$10^{-7.5}$	—
JBE (Nakayama)	2/6	1/6	0/6	—	—	$10^{-8.9}$ or <	2.6 or >
SLE (Hubbard)	6/6	6/6	3/6	0/6	—	$10^{-7.0}$	0.5
WEE (Rockefeller Institute)	6/6	6/6	3/6	1/6	—	$10^{-7.8}$	0.3

* Numerator indicates number of deaths; denominator indicates number of mice inoculated.

Identification of the virus was made by means of the intracerebral mouse neutralization test,[2] with use of mouse-brain virus and known guinea pig antiserums. Undiluted antiserums for JBE, SLE, and Western equine encephalomyelitis (WEE) viruses were tested in tenfold dilutions of the unidentified second-passage mouse-brain virus. As shown in table 2, JBE antiserum was found to neutralize at least 2.6 logs of virus, while SLE and WEE antiserums neutralized 0.5 log or less.

A portion of the original human brain material was transmitted to the Department of Virus and Rickettsial Diseases, Walter Reed Army Institute of Research, for confirmation of the isolation and identification. The report indicated that an agent that caused fatal nervous system disease in suckling and adult mice was again recovered. The agent was shown to produce viremia in newly hatched chicks, and chicks thus infected were found, two weeks after infection, to possess hemagglutination-inhibiting antibody for JBE virus, by use of the technique developed at the 406th Medical General Laboratory.[3] Serums obtained from infected chicks six weeks after inoculation were also shown to neutralize nearly 4 logs (10,000 L. D_{50}) of a known strain of JBE virus by the conventional neutralization test in mice (table 3).

Comment

Outbreaks of Japanese B encephalitis have been described by Sabin and co-workers [4] and by Lincoln and Sivertson [5] among American military personnel stationed in epidemic areas in the Far East, including Korea. The latter authors detailed their findings in

TABLE 3.—*Identification of Isolated Virus as Japanese B by Intracerebral Neutralization Tests with Infected Chick Serums and Known Viruses**

	Logs of Indicated Virus Neutralized			
Tested Serums	JBE (MI 311)	SLE (Hubbard)	WEE (California)	EEE† (460)
Chicken No. 1	3.9	1.2	0.2	0.1
Chicken No. 2	3.8	0.7	0.2	0.1
Pool No. 3 and 4	3.7	1.2	0.3	0.1

* Data furnished by Department of Virus and Rickettsial Diseases, Walter Reed Army Institute of Research.
† EEE, eastern equine encephalitis.

more than 200 cases occurring in soldiers in the Pusan perimeter in the late summer and fall of 1950, the area where the present patient most likely contracted the infection in 1954. A probable incubation period of 8 to 15 days has been ascribed to this disease [6]; the patient was in Pusan between the 11th and 17th days prior to the onset of illness.

Although no attempt was made to recover the virus from the blood of the patient reported here, it is quite possible that he had viremia when he arrived in the United States. Renewed emphasis should be given to the warnings of Hammon [7] and Reeves [8] of the possibility of introduction, by cases such as this, of the Japanese B encephalitis virus into the United States where potential vectors and suitable hosts are present. Reeves and Hammon [9] have demonstrated that seven species of three genera (Culex, Aedes, Culiseta) of mosquitoes indigenous to the western U. S. can transmit a mouse-brain-adapted strain of JBE virus to mice in the laboratory. These authors consider that the virus might well become established if introduced into areas where our native encephalitides are now endemic.

Summary

A fatal case of Japanese B encephalitis developed in an American soldier returning from Korea. Etiology of the disease was established by recovery of the virus from brain tissue and its identification by neutralization tests with specific immune serums.

Lieut. Col. William C. Butz, M. C., U. S. Army, Chief of Laboratory, Madigan Army Hospital, furnished the clinical abstract and autopsy findings.

Carmen Mauris and Beatrice England gave technical assistance in this study.

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Duodenostomy.—Duodenostomy has not been accepted as a standardized procedure. Undoubtedly misfortunes have followed its use in some cases. . . . Possibly the untoward sequelae were the result of faulty technique in the performance of gastric resection rather than imperfection in the procedure per se. In the past seven years, our opinion has been strengthened that the occasional selected utilization of duodenostomy will provide a margin of safety that cannot otherwise be achieved. . . . A controlled duodenal fistula is preferable to an insecurely closed duodenal stump which may result in leakage. Welch has advocated the use of concomitant catheter jejunostomy. We consider this to be an unnecessary adjunct. Possibly our enthusiasm to study the procedure may have stimulated us to utilize duodenostomy more frequently than was absolutely necessary. On the other hand, the procedure could have been employed advantageously in a few other selected cases. In our hands we have found duodenostomy preferable to an insecure closure of the duodenal stump by other methods. Its greatest field of usefulness may lie in the hands of younger less experienced gastric surgeons. As our experience with duodenostomy has increased, we have become more enthusiastic about the advantages of its occasional selected use and less impressed with its disadvantages. The two most serious complications, leakage about the catheter and electrolyte imbalance due to the loss of duodenal content, have in our hands been of no consequence. Proper closure of the duodenum about the catheter plus the use of Penrose drains has rendered the first complication inconsequential. Proper performance of gastric resection renders obstruction in the afferent loop almost nonexistent. The development of a persistent duodenocutaneous fistula . . . did not occur in our series.—C. G. McEachern, M.D., R. E. Sullivan, M.D., and J. E. Arata, M.D., Duodenostomy, *A. M. A. Archives of Surgery*, June, 1953.

SPECIAL ARTICLE

THE NATURAL HISTORY OF DISEASE

FRANK BILLINGS MEMORIAL LECTURE

William S. Middleton, M.D., Washington, D. C.

Appropriately, we are met today to honor the memory of a great clinician and medical statesman, Frank Billings, in Chicago, where his fine professional stature and eminence were attained. In 1878, a sturdy farm lad from Iowa County, Wisconsin, matriculated in the Chicago Medical College (now Northwestern University Medical School). Of splendid Anglo-Saxon stock, he was superbly endowed physically and intellectually. Upon completion of a common public school education, young Billings had attended the Platteville (Wisconsin) State Normal School for two years. Thereafter, he taught a country school in the town of Eden. His prompt advancement to the principalship of the Platteville High School was, in retrospect, a true forecast of his driving ambition and capacity.

Upon graduation from the Chicago Medical College, Dr. Billings served an internship in Cook County Hospital, a coveted post for the young physicians of that period. The investment of postgraduate studies in London, Paris, and Vienna gave his career an impetus that brought him shortly to the forefront of medicine in Chicago. Aside from Dr. Billings' personal attributes, his activities in the introduction of laboratory methods into clinical practice were probably the "open-sesame" to his initial success that eventually carried him to a position of preeminence in American medicine.

Dr. Billings was a born leader. He literally dominated every gathering he attended by the force of his presence and personality. Both at Northwestern University Medical School and at Rush Medical College, his efforts brought fruit in the improvement and the expansion of the physical plants. He was particularly effective in enlisting the financial support of wealthy Chicagoans in medical philanthropy. From his vantage point, Dr. Billings led the attack on nostrums and subnormal medical schools. The Council on Pharmacy and Chemistry and the Council on Medical Education and Hospitals of the American Medical Association were natural products of his energetic representations. His thoughts on medical education were especially advanced in the advocacy of the utilization of full and part-time clinical teachers in an integrated program. His recommendations for the coordination of public and private hospitals in a teaching plan are still valid and might be reviewed with profit in the light of a changing picture. With characteristic prescience, Dr. Billings urged the establishment of a national examining board.

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Lest the erroneous impression of an impersonal austerity be gathered from this recital of achievements, it should be recorded that Dr. Frank Billings was fundamentally a warm, kindly man. Physically massive, he was just as large of heart. Out of the abundance of his life and substance he gave unstintingly to every worthy cause. The connotation of the term "builder" that is so regularly applied to Dr. Billings in this community may deprive posterity of a measure of the deep humanity of the man. Rarely are the dominant qualities of accepted leadership so blended with the depth of human sympathy that characterized him. His students, nurses, interns, and associates adored him. Dr. Billings died in his 79th year (Sept. 20, 1932). His memory is held in reverence by a host of friends, both lay and professional, who were privileged to associate with him in his manifold activities.

Development of the Study of Disease

Health is no longer viewed in the negative sense as the mere absence of disease. Health connotes a harmony of mind and body with self and environment. This balance will obtain with the normal activity of every vital and supporting function. The nice adjustments of the body to its surroundings have been grouped under the term homeostasis by Cannon. Selye has extended this concept in his theory of adaptation. The internal milieu of the mammalian body is a complex, ever-changing medium of physical, physiological, and chemical factors so integrated in health as to maintain a sense and a presence of well-being. The present viewpoint, for example, emphasizes the continuous alterations in chemical constituents upon momentary changes in bodily or tissue requirements. Such changes may involve simple chemical reactions, or they may invoke complex physical, enzymatic, and steroid mechanisms. As long as the reserve of the involved elements is adequate, physiological equilibrium may be maintained. To this harmonious balance, the term eucrasia (eucrasy) has been applied.[1] An unnatural imbalance through an exhaustion of the reserves or an inability to meet demands from normal or abnormal sources results in a disturbance of function. Such disruptions find expression in symptoms and eventually in signs arising from pathological changes in tissues or organs.

From the beginning of recorded time, man has endeavored to interpret the manifestations of disordered function. The concepts reflect the state of human knowledge of a given period. From time to time, medical advance has been impeded by attempts to apply rigid criteria in the grouping of diseases. Nosology has, on occasions, been viewed as an end rather than an instrument in our hands. Indeed, systems of practice have been built on such insecure foundations. With the ascendancy of morbid anatomy and the splendid dividends from clinical-pathological correlations in the early 19th century, "dead-house" medicine dominated the scene for a period. In fact, in certain quarters no diagnosis was complete without the autopsy findings! Microbiology came into high estate in the late 19th and early 20th centuries. With its rise came the clinical fixation upon etiology. The last three

decades have witnessed an upward surge in the physiological and the physiological-chemical knowledge of bodily reactions in health and disease. The impact of physical, physiological, steroid, enzyme, and nuclear physical-chemical observations on medical thought and practice has been stupendous in recent years and will increase.

In this advance, medicine must never lose sight of fundamental facts. Sydenham [2] wrote, "A disease in my opinion, how prejudicial soever its cause may be to the body, is *no more than a vigorous effort of nature* to throw off the morbific matter, and thus recover the patient." In this light, disease must not be considered as an isolated phenomenon nor a series of more or less related phenomena. Man is rarely the passive host of "morbific matter" but reacts more or less violently, dependent upon the nature of the alteration induced locally or generally. Regardless of whether the inciting factor be microbial, nutritional, metabolic, degenerative, or neoplastic, there are always contributing circumstances in the evolution of the state of inequilibrium termed disease that must be given due consideration in the true comprehension of its natural history.

Within the memory of many physicians still active in the practice of medicine, there have been many radical changes in the mode of infectious diseases and in the clinical expression of specific infections. The exanthems are waning in incidence and severity. Black measles, black scarlet fever, and black smallpox are now only terrifying memories. Diphtheria, with its toll of morbidity and mortality, is largely controlled. Typhoid no longer recurs each summer and autumn to reflect the limitations of sanitation and the contamination of the water (and milk) supply. Lobar pneumonia is a rarity in our teaching hospitals. Suppurative mastoiditis and empyema are relics of a past that medicine would forget. Tuberculosis is losing some of its terror, but it is by no means a vanquished threat to health and life. Syphilis and gonorrhea are more adequately treated than ever before, but the failure to eradicate these diseases reflects the limitations of purely curative medicine. Moreover, man is paying a penalty for the disruption of the biological balance of nature through the introduction of antimicrobial agents. Resistant strains of pathogenic bacteria are appearing. Rickettsial and viral infections have increased with the abatement of bacterial diseases. With the change in the flora of the body under antimicrobial therapy, fungal infections have emerged in increasing frequence.

Observation and Experimentation

The time for reflection is now at hand. Before the countenance of certain of these diseases has vanished from the earth, we must attempt to commit to the printed record every detail of their course. At best, our observations are fragmentary. The published accounts of diseases too frequently represent the subjective reports of the patient, supplemented by the periodic examinations of the physician. From these bits and pieces, a composite picture is reconstructed. This reproduction is frequently at variance with the autobiographic accounts of physicians suffering from the same disorder. Sydenham's [2] account of his own gouty attacks is a classic example of this truth. A physician should be a "minister (or servant) and interpreter of nature" (Hippocrates). By observation and experimentation, medicine must strive to fill the gaps in a comprehensive understanding of the natural history of disease.

Sir Thomas Lewis,[3] while deploring the cleavage, bespoke the separate training of physicians for clinical medicine and for clinical science: "This science seeks, by observation and otherwise, to define diseases as these occur in man; it attempts to understand these diseases and their many manifestations and, here especially, makes frequent use of the experimental method." In his evolution of the thesis, Lewis indicated that two different types of psychological attributes were involved: "Self-confidence is, by general consent, one of the essentials to the practice of medicine, for it breeds confidence, faith and hope. Diffidence, by equally general consent, is an essential quality in investigation, for it breeds inquiry." Obviously, an acceptance of this position would spell a sharp limitation to the observational approach of which Lewis stated, "Eventually, however, the fertility of this method greatly declines by a process of exhaustion and, for those who can read the signs, this time has come in medicine." Trotter [4] voiced a similar reservation thus: "This limitation is the circumstance that the observer must wait upon the natural occurrence of the phenomena he wishes to study. The phenomena may be too infrequent for their significant recurrence to come within the span of human life, they may be too complex and too closely mixed with irrelevant events for the invariable sequence they possess to be detected."

Actually, the contention that observational and experimental skills are incompatible is untenable. The ramifications of the scientific approaches to the study of man in health and disease exceed the capacity of any physician to encompass, much less to apply them to the multitudinous clinical problems with which he is confronted. Wherever possible, these scientific methods must be invoked in the elucidation of covert situations, but a proper sense of proportions must be preserved. Mackenzie [5] said, "When I see the modern cardiologist getting his assistant to take an x-ray photograph of the heart and electrocardiogram, and even a blood-pressure reading, and then behold him sitting down to study these reports, I am truly amazed. I never could have realized that the practice of medicine could have become so futile and ineffective." Certain of the random chemical probings in the guise of medical practice are even more astounding. Without depreciating these studies one iota, let it be clearly understood that the only individual competent to direct the care of the patient is the physician. If he be wise, he will welcome the support of his associates in the basic sciences for coordinate clinical study. From their joint efforts will come a more complete understanding of the patient's problems and more intelligent treatment.

Indeed, out of such cooperative efforts have come material advances in the clinical appreciation of certain disorders in very recent years. Pheochromocytoma

was a poorly understood neoplasm until physiologists and pharmacologists clarified the background. Aldosteronism emerged as a distinct clinical entity upon the definition of its steroid responsibility. Agammaglobulinemia awaited electrophoretic fractionation of the serum protein for elucidation of the attendant recurring infections. The unusual symptoms and signs attendant upon carcinoid of the intestinal tract with hepatic metastasis represent an extraordinary example of the interdependence of observation and experimentation in the explanation of disordered function. With Charcot we may say, "Disease is from of old and nothing about it has changed. It is we who change, as we learn to recognize what was formerly imperceptible."

Hence, it behooves the physician to preserve his clinical acumen, as he accepts and extends the application of newer laboratory methods to the study of his patients. Indeed, his position must be fortified from a psychological standpoint to avoid the impersonality of the laboratory. If the physician is to capitalize on this advantage, however, the time is ripe for a new approach to the natural history of disease. With due attention to the experimental and laboratory contribution to this vital subject, there remains a vast area for reexploration and inquiry. John Brown [4] wrote, "Symptoms are universally available; they are the voices of nature." Mackenzie [5] said, "When we search for the recondite and the obscure, we fail to recognize the simple and the obvious." The English school has produced a number of great clinicians in the Hippocratic pattern. Thomas Sydenham [2] said:

> In writing, therefore, a history of diseases, every philosophical hypothesis which hath prepossessed the writer in its favor, ought to be laid aside, and then the manifest and natural phenomena of diseases, however minute, must be noted with utmost accuracy, imitating in this the great exactness of painters, who in their pictures copy the smallest spots or moles in the originals; for it is difficult to give a detail of the numerous errors that spring from hypothesis.

Thomas Willis [3] was a true seeker for knowledge, as witnessed in the following statement:

> After I had not found in Books what might satisfy a mind desirous of truth, I resolved with myself to reach into living and breathing examples; and therefore sitting oftentimes by the Sick, I was wont carefully to search out their cases, to weigh all the symptoms and to put them, with exact Diaries of the Diseases, into writing; then diligently to meditate on these; and then begin to adapt general notions from particular events.

In a similar spirit, William Heberden [6] afforded the following plan:

> The notes, from which the following observations were collected, were taken in the chambers of the sick from themselves, or from their attendants, where several things might occasion the omission of some material circumstances. These notes were read over every month and such facts as tended to throw any light upon the history of a distemper or the effects of a remedy, were entered under the title of the distemper in another book, from which were extracted all the particulars here given relating to the nature and cure of diseases.

Heberden's account of diabetes [6] serves as an example of the application of his method:

> An unusual thirst is first taken notice of, with a tongue rough and furred, and a bad taste in the mouth; the appetite fails; the pulse is too quick; the strength and flesh waste; the skin is in a burning heat, without the least tendency to sweat; the thirst makes these patients drink immoderately, and of course they make water much more frequently than is common to them, and in much larger quantities, like hysterical persons. . . . The urine in a diabetic is said to have a honey-like sweetness; but, in my judgment, formed upon the most perfect cases of this distemper, it ought in most persons rather to be called insipid; in one joined with a fever, I found it sweetish.

Even more illustrative of Heberden's clinical portraiture is the account of angina pectoris first published in 1768.[6] Indeed, this account may be taken as a proper model for the natural history of disease. Abstracted in essential detail, it reads:

> The seat of it, and sense of strangling and anxiety with which it is attended, may make it not improperly be called angina pectoris.
>
> They who are afflicted with it, are seized while they are walking (more especially if it be up hill, and soon after eating) with a painful and most disagreeable sensation in the breast, which seems as if it would extinguish life, if it were to increase or continue; but the moment they stand still, all this uneasiness vanishes.
>
> In all other respects, the patients are, at the beginning of this disorder, perfectly well, and in particular have no shortness of breath, from which it is totally different. The pain is sometimes situated in the upper part, sometimes in the middle, sometimes at the bottom of the os sterni, and often more inclined to the left than to the right side. It likewise very frequently extends from the breast to the middle of the left arm. The pulse is . . . not disturbed by this pain. . . . Males are most liable to that disease, especially such as have passed their fiftieth year.
>
> After it has continued a year or more, it will not cease so instantaneously upon standing still; and it will come on not only when the persons are walking but when they are lying down, especially if they lie on their left side, and oblige them to rise up out of their beds. In some inveterate cases it has been brought on by the motion of a horse, or a carriage, and even by swallowing, coughing, going to stool, or speaking, or any disturbance of mind. . . .
>
> Some have been seized while they were standing still or sitting; also upon first waking out of sleep; and the pain sometimes reaches to the right arm, as well as the left, and even down to the hands, but this is uncommon: in a very few instances the arm has at the same time been numbed and swelled. . . .
>
> The termination of the angina pectoris is remarkable. For, if no accidents intervene, but the disease go on to its height, the patients all suddenly fall down, and perish almost immediately. Of which indeed their frequent faintnesses, and sensations as if all the powers of life were failing, afford no obscure intimation.

Infectious Diseases

Unfortunately such accuracy of clinical observation is the rare exception in modern medical writings. This deficiency becomes increasingly apparent in the welter of laboratory data, relevant and irrelevant, that so frequently clutters papers in the medical journals. The natural history of the infectious diseases has been reasonably well recorded. Particularly is this true where the etiological agent has been isolated. Contributing to the adequacy of the natural history of the acute infections has been their clear-cut definition and their self-limiting course in many instances. The knowledge of exposure and the routes and portals of entry of the etiological agents has been quite comprehensive. The ability to establish incubation periods, prodromes, symptoms and signs of the fastigium, and the manner of defervescence to convalescence for the acute infectious diseases has lent great impetus to this effort. In most instances, the laboratory has afforded material support to the completion of the individual picture. Great hiatuses still exist in the knowledge of susceptibility and immunity. Actually, the advent of the anti-

microbial agents, while a great beneficence to humanity, has delayed the attack on some unsolved problems in this area. In the first place, the opportunity to study the natural history of a given bacterial infection is limited by the almost universal administration of antimicrobial agents at the earliest moment. Not infrequently, the broad-spectrum antimicrobial agents have been given on suspicion before the etiology has been established. The vis medicatrix naturae is overlooked in the medical thought of many contemporary physicians. Certainly, Gairdner's admonition[9] is completely outmoded in modern medicine: "There is one stipulation that I must make with those who desire to follow out this inquiry with the view of testing the normal mode of the crisis in typhus fever. It is, that *as many cases as possible should be left to their normal course, unaffected by either drugs or stimulants.*" Assuredly, the effectiveness of the antimicrobial agents in the treatment of lobar pneumonia, typhoid, and a host of other bacterial diseases seriously delimits any prospect of extending the knowledge of their natural history. A further deterrent to advances in this area has been the shifting emphasis in interest and study. This circumstance is doubly unfortunate in the unexplored fringes of this broad field.

Constitutional Disorders

The case of the constitutional disorders is much more involved. Many of the factors formerly attributed to heredity are now viewed as environmental and even infectious in origin. The area is wide open for a frontal attack. The degenerative and neoplastic diseases afford a fallow field for this approach. Mackenzie forsook a lucrative practice and an assured future in Harley Street to pursue this angle in St. Andrews, Scotland. He had two objects: "(1) understanding of the mechanism of symptoms, and (2) understanding of their prognostic significance."[5] In his biographer's phrase he urged his contemporaries "to forsake the study of death for that of life."[10] The way is not easy, but the future growth of clinical medicine is inextricably bound with a refinement and a discriminating use of the proved methods of clinical observation. The pathogenesis of atherosclerosis, for example, will be more clearly understood when all contributing factors in its initiation are brought into focus and their relative importance fixed. The familial occurrence of vascular degeneration is a commonplace observation, yet heredity has been discredited in some studies and dietary factors have been given increasing responsibility. The exact part of faulty cholesterol metabolism in the ultimate atherosclerotic process is still uncertain. The pendulum is apparently swinging toward a secondary relationship. In developing the natural history of this degenerative disorder, increasing attention must be devoted to the detailed history, with especial reference to the occurrence and the complications of past illnesses, social history, including habits and exposures, family history, and the evolution of the referable complaints. Since physicians have a conspicuous predisposition to atherosclerosis, they might render a conspicuous service by affording clinical autobiographies in this direction. Added to this approach would be the invaluable laboratory studies that anticipate and measure gross changes in pathological physiology. Billings[11] wrote, "Medicine today is applied science. If we utilize the knowledge of today in an attempt to cure and prevent disease, it must also be an experimental science. . . . Experimental medicine must be the means of removing the ignorance which still embraces so many of the maladies which afflict manhood."

Neoplasia arises from so many causes as to render a generic factor difficult of definition. Yet there may prove to be a single basic etiology with a number of variants responsible for the development of specific new growths. Painstaking studies of patients with neoplasms may add materially to our knowledge of their inception and course. Furthermore, especial attention to departures from the rule in apparent susceptibility and resistance to given tumors in certain strains may afford leading clues to the fundamental origin of neoplasia. While great progress has been made in this direction, the clinician is woefully deficient in the tools for the early recognition of a majority of visceral tumors. Surface or accessible neoplasms will receive early and appropriate attention in most instances, but carcinoma of the pancreas, for example, has usually reached an inoperable stage when surgery is proposed. Deep-seated upper abdominal pain radiating to the back, painless progressive jaundice, sudden diabetes mellitus in individuals past 45 years of age, and unexplained phlebothrombosis are late manifestations of carcinoma of the pancreas. Yet they may be the first symptoms or signs that bring the patient to the physician. Frequently, cachexia has already become manifest. In a few patients, vague upper abdominal discomfort, coupled with marked introspection and nervousness, has anticipated frank symptoms and signs of carcinoma of the pancreas by months in our experience. In carcinomatous involvement of the head of the pancreas, melena, occult or overt, may be a guidepost. In such instances, roentgenologic confirmation may be anticipated. The chemical studies directed toward the quantitation of the digestive ferments of the external secretion of the pancreas afford little support to the early diagnosis of carcinoma. Here, then, lies one of the unsolved mysteries of medicine whose solution may be expedited by an "exact Diary of the Disease." Its parallels are innumerable.

If Hippocrates[12] be forgiven his sententious vein, the following quotation affords an excellent argument for a profound knowledge of the natural history of disease:

> And he will manage the cure best who has foreseen what is to happen from the present state of matters. For it is impossible to make all the sick well; and this, indeed, would have been better than to be able to foretell what is going to happen; but since men die, some even before calling the physician, from the violence of the disease, and some die immediately after calling him, having lived, perhaps, only a day or a little longer, and before the physician could bring his art to counteract the disease; it therefore becomes necessary to know the nature of such affections, how far they are above the power of the constitution; and, moreover, if there be anything divine in the diseases, and to learn a foreknowledge of this also. Thus a man will be the more esteemed to be a good physician, for he will be better able to treat those aright who can be saved, from having long anticipated everything; and by seeing and announcing beforehand those who will live and those who will die, he will thus escape censure.

Obviously, prognosis is a vital element in the practice of medicine. Its cultivation and acquisition are avidly pursued by all clinicians worthy of the name. Recently, Bloomfield [13] wrote a cogent editorial on the subject, in which he evaluated the factors in deriving such conclusions. With experience, he stated, "the analytical process may become lightning fast and indeed may be largely carried on subconsciously. The young doctor, however, may well profit by deliberately taking into account the various factors in prognosis . . . and by making a conscious analysis of the situation in case of his patients. Such a running of mental scales will help develop later virtuosity." With incisive insight, Ryle [14] remarked, "Prognostic ability is born largely of pathology and patiently gathered clinical experience. It evolves even more slowly than diagnostic ability. Minute and careful clinical observation, a good visual memory, and that necessary inquisitiveness about the subsequent course of cases which is nowadays systematized in the follow-up inquiry may all be numbered among the handmaidens of prognosis."

Conclusions

In a word, there is no royal road to success in the prognosis of human disease. Feeble though the reed may appear when tested by strict scientific standards, the patient or the family may properly expect general information as to the probable course of a given illness from the physician. Fortified by extended experience and careful study of the problems presented by the patient, the true natural historian, supported by discriminating laboratory studies, will become increasingly proficient and accurate in assembling the evidence for the diagnosis and prognosis. Furthermore, with a sound basic knowledge of the natural history of disease, he will not fall into the uncritical habit of therapeutic sophistry, but, with a broad perspective, his therapy will have direction and his conclusions of its effectiveness will reflect measured judgment.

"Sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatsoever abysses nature leads, or you shall learn nothing" (Huxley).

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COUNCIL ON FOODS AND NUTRITION

Report to the Council

The Council has authorized publication of the following comments concerning "The Use of Chemical Additives in Food Processing," a report of the Food Protection Committee, Food and Nutrition Board of the National Research Council.

EUGENE H. STEVENSON, M. S.
Acting Secretary.

CHEMICAL ADDITIVES

Paul E. Johnson, Ph.D., Washington, D.C.

In an industrial, largely urban society such as that of the United States, it is necessary that food be provided for large numbers of people distantly removed from the site of production. The provision of an abundant, wholesome, and economical food supply requires that the foodstuffs be produced efficiently; be processed, preserved, and stored so as to minimize wastage and loss of nutritive value; and be distributed to the consumer in a sanitary condition. That the foods be diversified, esthetically appealing, and convenient to use is perhaps of only slightly less importance.

Many technological developments have been applied to the task of furnishing our food supply; important among them is the use of chemicals. There has been some public concern about the number and kinds of chemicals that enter the food supply during its production, processing, and storage. In 1950, this led to an investigation of the use of chemicals in foods by the Delaney committee of the U. S. House of Representatives. The report of this committee [1] stated that the U. S. Food and Drug Administration had estimated that 704 chemicals were used in foods. A list of the chemicals was not published, but the number cited included both the chemicals that are intentionally added to foods by the processor and those that may incidentally get into the food during its production, processing, and storage, such as insecticides, other pesticides, and detergents.

Recently the Food Protection Committee of the National Research Council undertook a study of the use of chemicals in foods for the purpose of evaluating the benefits arising from such use and appraising the significance of associated public health problems. One phase of this study involved a survey to determine the extent of use and the technological benefits of chemicals in food processing. A report of this survey is now available.[2]

The report is concerned only with intentional chemical additives—chemicals introduced into foods for the purpose of imparting some desired quality to, or of serving a functional purpose in, the foods. It describes briefly the technological reasons for using chemical ad-

Executive Secretary, Food Protection Committee, Food and Nutrition Board, National Academy of Sciences–National Research Council.

ditives in the processing of each of six major classes of foods: cereal products, fruits and vegetables, beverages, dairy products, confections and other sweets, and meat products and fats. This is an informative account of the use of additives to facilitate processing and formulation, inhibit deterioration in storage, enhance and maintain nutritive value, and improve the appeal and acceptability of foods. These benefits to the consumer from the use of additives are so seldom recognized that a discussion of them deserves wide attention.

The major part of the report is devoted to a compilation of intentional chemical additives. In it are listed all the additives for use in meats and fats, those for which the committee was given authentic evidence of use, and those permitted by regulation in standardized foods. Approximately 550 additives, grouped according to function, are listed in the compilation. The foods in which the additives are used are given along with levels of use, whenever that information was available to the committee. The regulations concerning the additives promulgated by the Food and Drug Administration and the meat inspection branch of the U. S. Department of Agriculture are cited.

A small number of preservatives are used in processed foods. Familiar members of this group of additives are benzoic acid and sodium benzoate. The mold and rope inhibitors used in breads, sodium diacetate and the propionates, are also well known. Chlortetracycline, used on uncooked poultry to retard spoilage, and sorbic acid, a fungistat, are more recent additions to the list of preservatives.

Antioxidants, which are widely used in fats and in foods containing fats to retard oxidation and the resulting deterioration of flavor, include the sulfites and bisulfites as well as a group of organic chemicals. Among the latter are ascorbic acid and its salts, lecithin, and the tocopherols. Derivatives of hydroxytoluene, hydroquinone, and guaiaretic acid are also widely used. A few oxidizing additives, including chlorine, chlorine dioxide, peroxides, iodates, and bromates, are also employed, primarily as bleaching and maturing agents.

A wide variety and substantial number of additives are used to influence or stabilize the texture of processed foods. These act in many ways. In one group are the sequestrants, a class of salts that function by inhibiting the action of ions and that aid in emulsification through their effect on the proteins present in the food. A second group includes the surface active agents, among which are the monoglycerides and diglycerides and their derivatives and the polyoxyethylene and sorbitan esters of fatty acids. A third group consists of stabilizers and thickeners, which include the natural and synthetic gums, pectin, agar-agar and Irish moss derivatives, and alginic acid and its compounds.

A number of acids, alkalis, and buffers are used by food processors to adjust or stabilize the pH of their products. Many common organic and inorganic acids, bases, and salts are employed. Acids and bases have long been used in baking, in such a manner that their reaction will provide gas for leavening.

Two groups of chemicals are added to processed foods entirely or primarily for the purpose of increasing their esthetic appeal—the food colors and the flavoring agents. The food colors include both a number of natural dyes and the 16 FDC (food, drug, and cosmetic) certified colors. The flavoring agents form a large and diverse group, comprising some 300 essential oils, extracts, synthetic aromatic chemicals, and other materials. The greater part of the group are the synthetic flavors, which are employed very widely in many processed foods.

The nutrient supplements, vitamins and minerals, are classified as additives by the committee; the nonnutritive sweeteners, saccharin and the cyclamates, form a separate group. A final miscellaneous group contains additives of such diverse functions as candy polishes and glazes and yeast foods.

Safety of the additives for use in foods was not a matter of concern in the survey, and no discussion of safety is included in the report. The Food Protection Committee has previously stated that, as a basis for evaluating the safety of additives for use in foods, "information must be obtained on: (A) the chemical and physical properties of the additive . . .; (B) the biologic effects . . .; and (C) the anticipated levels and patterns of consumption."[3] The present report is the most complete source of information available for estimating levels of consumption of the additives. It contains quantitative data about usage of most, but by no means all, of the additives listed. Thus, an approximation of the quantity of an additive that might be ingested by a consumer with a given food habit can be formed.

There are limitations in the compilation for use in this way, however, which the committee points out. The list includes additives permitted by regulations but which may not actually be used. A particular additive may be used only seasonally or by only a part of the industry. Quantitative data given may represent the maximum rather than the actual or mean level of usage. Most of the classes of additives contain groups of alternative materials from which a selection may be made for use in a particular food product. These limitations do not detract from the value of the report as a reference; they do indicate caution in using it as a precise quantitative guide.

This report presents a realistic and unbiased view of the use of chemicals in food processing in this country. It should alleviate some of the fear about use of these agents that has existed in some quarters. On the other hand, it should aid materially in providing an understanding of the nature and extent of the problems associated with their use.

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MEDICAL RESEARCH IN THE DEPARTMENT OF DEFENSE

GUEST EDITORIAL

Lowell T. Coggeshall, M.D.

Paralleling the technological development of modern weapons systems, less publicized but very important medical research is being conducted within the Department of Defense. Without effective manpower the developments in modern weapons systems could not be effectively utilized.

In the armed services man must be prepared to take his place quickly in environments where there are wide ranges of temperature, pressure, and humidity; visual problems; noise and vibration; positive and negative g-forces; noxious gases; and ionizing radiation. In addition man must be prepared to make his temporary abode among populations in foreign lands where exotic diseases are commonplace and many better known diseases, as we know them, are endemic. Man must be prepared to become acclimated and function as part of the defense team from the polar regions to the tropics and from pressures beneath the seas to the rare atmospheres of extreme altitudes, where wide latitudes of temperature, from the cold of altitude to the heat of supersonic aircraft, and where increases in cosmic radiation are encountered. Thus the modern fighting man must be prepared either to adapt himself or to have created for him an environment in which he may cope with these stresses and still function efficiently to operate modern weapons.

Well men must be aided to survive the stresses of environment, and, in addition, the sick and wounded must be rehabilitated in order to conserve fighting strength. The armed forces medical services have always stressed preventive medicine in reducing the incidence of common diseases and mental illness incapacitating men from duty, in assisting in cutting down the number of transportation accidents, and in preventing disease by elimination of insect and rodent vectors. In the field of therapy, improved treatment of wounds, burns, and injuries from ionizing radiation is desired as well as identification and treatment of diseases encountered in foreign lands that differ from those known within the borders of our country. The challenge of these problems is being met by medical research investigators of the Department of Defense in programs of wide coverage conducted in 29 laboratories of the armed services together with contract work in universities and civilian institutions. In addition, clinical investigation is conducted in many of the armed forces hospitals not directly associated with the medical research laboratories.

These medical research laboratories of the Department of Defense vary in size, composition, and orientation in their research programs; and they have no civilian counterparts covering such a magnitude of special investigations. They are operated by the medical personnel of the Army, Navy, and Air Force, with military and civilian scientists working side by side. Five of these laboratories are located in areas outside the United States—in Egypt, Japan, Formosa, Alaska, and Puerto Rico. In addition there is a research unit in Malaya working on infectious diseases in close cooperation with the Institute for Medical Research of the Federation of Malaya, Kuala Lumpur, Malaya. Some carry on basic and applied research in special areas such as the nutrition of military personnel under stress; others limit their investigations to aviation medicine or flying equipment and clothing, or physiological and psychological problems peculiar to underwater operations. The one tri-service laboratory is devoted to development of special items of medical equipment pertinent to military medical field operations. While some of the work is of necessity classified, the majority of the research results are reported in the open literature.

Many of the units are located near university centers from which consultation may be obtained. Some have university affiliations, such as the Johnsville Acceleration Laboratory, wherein military officers are associated with and provide teaching services for the University of Pennsylvania Graduate Medical School, while selected graduate students utilize the excellent facilities of the human centrifuge to study effects of g-forces on primates, including man. Coordination of programs and projects is accomplished through a medical sciences coordinating committee in the office of Clifford C. Furnas, Assistant Secretary of Defense (Research and Development), who maintains close liaison with the office of Dr. Frank B. Berry, Assistant Secretary of Defense (Health and Medical). Civilian consultation on the programs and projects is sought through the medical division of the National Research Council, the Armed Forces Epidemiological Board, and the Advisory Panel on Medical Sciences to the Assistant Secretary of Defense (Research and Development). The present chairman of the Advisory Panel on Medical Sciences is Dr. Richard A. Kern of Philadelphia.

Of the 29 medical research laboratories in the Department of Defense, the 3 major ones—Army Medical Research Institute, Walter Reed Army Medical Center, Washington, D. C.; Naval Medical Research Institute, Bethesda, Md.; and the Aeromedical Research Laboratory, Wright Patterson Air Force Base, Dayton, Ohio—are well known to the medical profession. However, the 26 other laboratories may not be so well known, and, since one cannot outline the mission of each, in general it may be stated that the medical laboratories of the Defense Department conducting research are

1955 Chairman of the Advisory Panel on Medical Sciences to the Assistant Secretary of Defense.

losely allied to hospital centers or have clinical mate-
ial readily available. An example is the surgical re-
earch unit at Brooke Army Hospital near San Antonio,
exas, which specializes in research on the care and
reatment of burns. Severely burned persons are flown
o this unit by special evacuation teams from points
hroughout the United States. At the Navy Medical
esearch Laboratory at the Submarine Base, New
ondon, Conn., research is devoted exclusively to sub-
arine medicine. All prospective submarine crews are
rained there, and they afford the laboratory a continu-
us flow of subjects for research. At the Air Force
chool of Aviation Medicine, Randolph Air Force
ase, Texas, about 75% of the effort of the personnel
f the school is in research primarily in aviation medi-
ne. Here investigation is carried on in the physio-
gical effects of high-speed, high-altitude acceleration
nd noise; neuropsychiatric factors affecting selection
nd classification; and air-crew effectiveness and air-
rew evacuation, as well as other areas.

It is encouraging to know that this wide spectrum
research in the medical sciences is being intelli-
ently and vigorously conducted. Opportunities for
esearch experience in the Department of Defense
aboratories are available to qualified reserve military
ersonnel as well as to career military and civilian
ientists.

AR-REACHING STUDY AT MIDPOINT

Some 7,000 hospitals across the nation now have re-
ived questionnaires that may influence the course of
edicine in the United States. Hospital construction,
edical education, health insurance rates, public re-
rd for doctors and health—all these are subject to
neficial revision when this massive five-year study is
mpleted. The study is now at midpoint. It began late
1953 when the A. M. A. undertook the gigantic task
measuring the total of medical service rendered to
e American people by their physicians. This had
ver been done before. For once, there would emerge
national picture of what the patient gets for what he
ends—and not the cold, misleading stroke of a statis-
ian's pen sketching only a dollar sign.

In phase 1 of the three-point study, the A. M. A. Bu-
au of Medical Economic Research determined the
e and sex of all hospital patients on a given day. It
s a simple pair of questions, but, thanks to the ear-
st cooperation of hospital administrators, the an-
ers were a series of startling revelations. They
closed, for example, that males are the more hospi-
ized sex, although one-sixth of admissions were
egnant women. And the study revealed that 28% of
spital patients under 15 were in hospitals for patients
h nervous or mental diseases.

Last month, the more important phase 2 of the sur-
y began. Questionnaires were sent out to learn the
e, sex, length of stay, and diagnoses for every hos-
alized person discharged during the third week of
s month, October, 1956. The import of this quiz
et alone is tremendous. It will help answer such
estions as: Which ailments or conditions are send-
most Americans to hospitals? Which are keeping
m there the longest? How many hospital beds are
en up by accident casualties, by pregnant women, by patients undergoing elective surgery (such as cosmetic)? (The survey will not accurately show the number of patients admitted to a hospital for "a rest" or for general observation.) What operative procedures seem to be predominant for specific diagnoses, and how will this knowledge contribute to medical education? How many patients are helped through diagnoses of other ailments that were hidden or unsuspected when they were admitted to the hospital—and how might this help in the training of a physician? How can the patterns thus disclosed help in the design and location of new hospitals? The figures, as if from a projector, will be able to spring into view like composite pictures of the 20 million people admitted to U. S. hospitals each year.

Next spring the huge survey is expected to be completed, with similar information asked of physicians on their patients seen in the office and in the home. When all the data are collected, correlated, and evaluated for publication late in 1958, the A. M. A. will have spent about $100,000 on this project, according to Frank G. Dickinson, Director of the Bureau of Medical Economic Research. The consequent value to U. S. physicians and the general public might be inestimable.

Again, hospital administrators are playing a key role. They are asked now to supply more data than they did in 1953, but, as the Bureau's director says, "For the well-run hospital this should be a routine copying job." The result to which they are contributing is anything but routine.

ENDOMETRIOSIS AND INFERTILITY

Endometriosis decreases the fertility of an individual, although many women conceive in spite of this complication. Fertility in normal women declines rapidly after 35 years of age. Pregnancy does not have a deleterious effect on endometriosis, for it is likely to remain quiescent or even undergo some regression. The progress of endometriosis is dependent on ovarian function, so that any measure that suppresses gonadal activity will affect the endometriosis favorably. Thus, the steroid hormones, estrogens and androgens, inhibit the function of the anterior lobe of the pituitary and suppress ovarian function. A diagnosis of endometriosis is usually made on pelvic examination, which will reveal an enlarged adherent ovary on one or both sides and thickening and fixation in the cul-de-sac and rectovaginal septum. In classic cases bluish cysts can often be visualized in the posterior vaginal cul-de-sac with the aid of a speculum. A curettage provides no information concerning endometriosis, but it will rule out pathology of the endometrium such as carcinoma. A positive diagnosis of endometriosis in some cases cannot be made prior to laparotomy. However, the history of progressive dysmenorrhea and typical pelvic findings leave little doubt in most cases. If the patient does become pregnant and a repeat cesarean section is carried out, the adnexa and cul-de-sac may be inspected for the presence of endometriosis, and if it is extensive cesarean hysterectomy may be considered. If surgery is indicated in progressive endometriosis in young women, the present tendency is to be as conservative as possible, particularly in the individual who wishes more children.

ORGANIZATION SECTION

ANNUAL A. M. A. MEETING IN NEW YORK, JUNE 3-7, 1957

The Annual Meeting of the American Medical Association will be held in New York, June 3-7, 1957. The Scientific Exhibit and several meeting halls will be housed in the new, air-conditioned Coliseum, along with Registration and the Technical Exposition. Other meeting halls will be held in hotel ballrooms in the adjacent vicinity of the Coliseum.

Persons desiring to read papers before one of the sections should communicate with the secretary of that section. Similarly, persons desiring space in the Scientific Exhibit should obtain an application for space from the exhibit representative or from the Secretary of the Council on Scientific Assembly. The Scientific Program is well under way, and Dec. 17, 1956, has been set for the deadline for the receipt of requests to read papers and applications to present scientific exhibits.

Additional information may be obtained from the Secretary of the Council on Scientific Assembly, American Medical Association, 535 N. Dearborn, Chicago, 10.

Following are the secretaries and representatives to the Scientific Exhibit from the various sections:

Anesthesiology
Secretary—Daniel C. Moore, M.D., 1118 Ninth Ave., Seattle 1.
Exhibit Representative—Edwin L. Rushia, M.D., University Hospital, Augusta, Ga.

Dermatology
Secretary—Clarence S. Livingood, M.D., Henry Ford Hospital, Detroit 2.
Exhibit Representative—Stanley E. Huff, M.D., 636 Church St., Evanston, Ill.

Diseases of the Chest
Secretary—Burgess L. Gordon, M.D., Woman's Medical College of Pennsylvania, Philadelphia 29.
Exhibit Representative—Edwin R. Levine, M.D., 109 N. Wabash Ave., Chicago 2.

Experimental Medicine and Therapeutics
Secretary—Elliot V. Newman, M.D., Vanderbilt University Hospital, Nashville 5, Tenn.
Exhibit Representative—Joseph F. Ross, M.D., University of California Medical Center, Los Angeles 24.

Gastroenterology and Proctology
Secretary—William H. Dearing, M.D., 200 First St. S.W., Rochester, Minn.
Exhibit Representatives—Willard H. Bernhoft, M.D., 537 Delaware Ave., Buffalo 2, and George Gordon McHardy, M.D., 3636 St. Charles Ave., New Orleans 15.

General Practice
Secretary—E. I. Baumgartner, M.D., 25 Alder St., Oakland, Md.
Exhibit Representative—I. Phillips Frohman, M.D., 2924 Nichols Ave S.E., Washington 20, D. C.

Internal Medicine
Secretary—Rudolph H. Kampmeier, M.D., Vanderbilt University School of Medicine, Nashville 5, Tenn.
Exhibit Representative—Henry T. Ricketts, M.D., 950 E. 59th St., Chicago 37.

Laryngology, Otology and Rhinology
Secretary—Hugh A. Kuhn, M.D., 112 Rimbach St., Hammond, Ind.
Exhibit Representative—Walter E. Heck, M.D., Stanford University Hospitals, San Francisco 15.

Military Medicine
Secretary—Capt. Cecil L. Andrews, M. C., U. S. N., Bureau of Medicine and Surgery, Department of the Navy, Washington 25, D. C.
Exhibit Representative—Col. Frank M. Townsend, M. C., U. S. A. F., Armed Forces Institute of Pathology, Washington 25, D. C.

Nervous and Mental Diseases
Secretary—Adolph L. Sahs, M.D., University Hospitals, Iowa City.
Exhibit Representative—Benjamin Boshes, M.D., Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11.

Obstetrics and Gynecology
Secretary—Keith P. Russell, M.D., 511 S. Bonnie Brae St., Los Angeles 57.
Exhibit Representative—Frederick H. Falls, M.D., P. O. Box 47, River Forest, Ill.

Ophthalmology
Secretary—Harold G. Scheie, M.D., 313 S. 17th St., Philadelphia 3.
Exhibit Representative—Frank W. Newell, M.D., 950 E. 59th St., Chicago 37.

Orthopedic Surgery
Secretary—H. Herman Young, M.D., 200 First St. S.W., Rochester, Minn.
Exhibit Representative—James I. Kendrick, M.D., 2020 E. 93rd St., Cleveland 6.

Pathology and Physiology
Secretary—Hugh A. Edmondson, M.D., 1200 N. State St., Los Angeles 33.
Exhibit Representative—Samuel A. Levinson, M.D., 808 S. Wood St., Chicago 12.

Pediatrics
Secretary—Wyman C. C. Cole Sr., M.D., 3011 W. Grant Blvd., Detroit 2.
Exhibit Representative—F. Thomas Mitchell, M.D., Le Bonheur Children's Hospital, Memphis 5, Tenn.

Physical Medicine
Secretary—Walter J. Zeiter, M.D., 2020 E. 93rd St., Cleveland 6.
Exhibit Representative—Donald A. Covalt, M.D., 400 E. 34th St., New York 16.

Preventive Medicine
Secretary—Frank Princi, M.D., Kettering Laboratory, University of Cincinnati College of Medicine, Cincinnati 19.
Exhibit Representative—Paul A. Davis, M.D., 633 E. Market St., Akron 4, Ohio.

Radiology
Secretary—Gustaf E. Lindskog, M.D., 333 Cedar St., New Haven 11, Conn.
Exhibit Representative—Richard H. Chamberlain, M.D., 3400 Spruce St., Philadelphia 4.

Urology
Secretary—Thomas A. Morrissey, M.D., 40 E. 61st St., New York 21.
Exhibit Representative—Milton M. Coplan, M.D., 550 Brickell Ave., Miami 32, Fla.

PROGRESS ON A. M. A. SESSION IN SEATTLE

Plans are progressing for the A. M. A. Clinical Session in Seattle on Nov. 27-30. It is the first time the A. M. A. has met in Seattle. Under the general chairmanship of M. Shelby Jared of Seattle, several committees have formulated the program, after conferences with the A. M. A.'s Council on Scientific Assembly. Hale Haven's Scientific Program Committee reports a tremendous response to the call for volunteers to present scientific papers. Over 140 abstracts have been submitted, and only 40 papers can be presented. The program was planned for the general practitioner, and his everyday problems. Panel discussions also are being developed.

F. A. Tucker's Television Program Committee has drafted a series of "wet and dry" clinics on a closed television circuit to point up such diverse subjects as cesarian section, vein stripping, "the G. I. Bleeder," and chest emergencies. A panel discussion on the aging population is to be shown to the public on an open television channel. Sydney Hawley's Entertainment Committee is planning menus, decorations, favors, and a sparkling program for the House of Delegates dinner. Mrs. Roger Anderson and Mrs. Lester Henderson are planning events for the Auxiliary. Boat trips, luncheons, shopping tours, and symphony concerts are on the agenda.

A series of films on medicolegal problems will be produced by the pharmaceutical firm of William S. Merrell Company of Cincinnati in cooperation with the A. M. A. Law Department. The first film, dealing with the doctor as a medical expert witness, will be previewed at the A. M. A. Clinical Session in Seattle, Nov. 27-30. This film will be available for showings at state and county medical society meetings after Dec. 15.

Wilbur Watson, in charge of housing and transportation, and his committee are checking accommodations. Seattle's hotels have assured him there are plenty of first-class rooms to accommodate all visitors. (Get your reservations in early.) The Washington State Medical Association Office is handling all the details. Staff members are being aided by Mr. James Borgen, Executive Secretary, Kitsap County Medical Society, and Mr. William Ramsey, Executive Secretary, King County Medical Society. The usual high caliber of commercial and scientific exhibits is expected. Plan to be in Seattle Nov. 27-30. It will be well worth your while. For hotel reservations, write Dr. Wilbur Watson, Chairman, A. M. A. Housing Bureau, 315 Seneca St., Seattle.

UNIVERSITY OF WASHINGTON MEDICAL SCHOOL AT SEATTLE

The territorial legislature authorized the establishment of schools of medicine and law at the University of Washington in 1885, and the minutes of the Board of Regents of the University for October, 1885, include a report of a special committee on the organization of the proposed medical school. It includes the names of proposed faculty personnel, the departments to be developed, the general outline of the curriculum, and the tuition to be charged. What happened to these plans is not clear.

About the time of the first World War, interest in the development of a medical school at the university increased, and, while during that period instruction was established in anatomy, physiology, bacteriology, pathology, biochemistry, and pharmacology, it was not formally organized into a two-year basic medical science course equivalent to the first two years of medicine. During the next two and a half decades, no energetic efforts were made to establish either a two-year basic medical science or four-year medical school program.

In 1944-1945 there was sudden greatly increased interest spearheaded by the medical profession, with the support of the university authorities. The dental profession joined hands with the medical profession and the university authorities, and, during the 1945 session of the legislature, authorization was given for the establishment of medical and dental schools at the University of Washington in Seattle. Administrative officers were selected for the new schools late in 1945, and progress was rapid enough to permit admission of 50 students to the entering class of each school in the fall of 1946. Instruction during the first three years was conducted in temporary quarters, while the current physical facilities were being developed. The basic medical science facilities were developed so as to meet not only the needs of the new professional schools but also other university disciplines where such instruction is needed.

Although the teaching hospital facilities at the university are still in the developmental stage, the medical school, in cooperation with such institutions as the King County Hospital, the Veterans Administration Hospital, the U. S. Public Health Service Hospital, the Children's Orthopedic Hospital, the Firland Sanatorium, certain private hospitals, state institutions, and local as well as state agencies, has been able in the 10 years of its existence to develop an institution that has won high national recognition in both teaching and research. Physicians attending the midwinter session of the American Medical Association in Seattle will find a visit to the new medical school an interesting and worthwhile experience.

PROCEEDINGS OF THE CHICAGO MEETING

ABSTRACT OF PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT THE ANNUAL MEETING IN CHICAGO, ILL., JUNE 11-15, 1956

(Continued from page 505)

Introduction of Resolutions

The Speaker called for the introduction of resolutions as numbered.

No. 1, Resolution on Service Membership for Reserve Officers

Dr. Charles L. Leedham, for the Section on Military Medicine, introduced the following resolution, which was referred to the Reference Committee on Medical Military Affairs:

WHEREAS, The American Medical Association Constitution and Bylaws make no provision for any type of American Medical Association membership for the military reservist who is on temporary active duty with the Armed Forces, the Public Health Service or the Veterans Administration unless the physician had previously held membership through a local county and state medical society; and

WHEREAS, A limited number of state and county medical societies have provided some type of local membership to qualify the physician absent in military service for American Medical Association membership, and other state and county societies have refused to take such action; and

WHEREAS, It is extremely desirable to afford all physicians in the military services, whether permanent or temporary, the opportunity to become members of the American Medical Association; therefore be it

Resolved, That the House of Delegates amend the provisions of the Bylaws so that membership can be made available for the reserve officers of the military services on short term duty by changing Section 2, Chapter I of the Bylaws of the American Medical Association as follows: That the subclassification "(A)" be inserted after the title words "Service Members" and before the word "Regular" making the present Section 2, as written, the first of two parts; and that the following be added as the second part "(B) Commissioned medical officers of the reserve components of the organizations listed in Section 2(A) above are accorded the same rights and privileges as regular officers, insofar as membership is concerned, during their term of active duty plus one year or until they become members of a constituent association of the American Medical Association whichever is sooner."

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. William C. Chaney, Chairman, Tennessee, submitted the following report, which was adopted:

Your reference committee supports the principle expressed in Resolution No. 1 by the Section on Military Medicine and agrees that it is extremely desirable to afford all physicians in the military services, whether permanent or temporary, the opportunity to become members of the American Medical Association. However, the resolution as proposed presents difficult administrative problems. Further, the committee is cognizant of the prerogative of county medical societies in selecting their own members. Therefore, your committee recommends that the resolution not be adopted at this time.

Your committee does recommend that the Secretary and General Manager of the Association be authorized to meet with representatives designated by the Surgeons General of the Army, Navy, and Air Force to study and make recommendations on this subject to the House of Delegates at the 1956 Clinical Meeting.

Resolutions No. 2 to 5

Dr. Truman C. Terrell, for the Texas delegation, introduced the following Resolutions Nos. 2 to 5, each of which was referred to the Reference Committee on Legislation and Public Relations:

No. 2. Resolution on the Narcotic Traffic

PREAMBLE

Senate Resolution 67, adopted March 18, 1955, authorized the first nationwide investigation of the narcotics traffic with the aim to find "ways and means of improving the Federal Criminal Code and other laws and enforcement procedures dealing with possession, sale, and transportation of narcotics, marihuana, and similar drugs." This task was assigned to the Senate Subcommittee on Improvements in the Federal Criminal Code, the Hon. Price Daniel, junior Senator from Texas, Chairman. This subcommittee has found that, among other things, the United States has more narcotic addicts, both in total numbers and population-wise, than any other country in the western world; that the illicit drug traffic has tripled in the United States since World War II; and that drug addiction is responsible for approximately 50 per cent of all crimes committed in the larger metropolitan areas. This subcommittee now is drafting specific legislation concerning improvement of narcotic control.

Resolved, That the House of Delegates of the American Medical Association recommend to Congress that appropriate legislation be enacted to improve narcotic control, and that copies of this resolution be sent to the President of the United States, members of his Cabinet, and all members of Congress.

No. 3. Resolutions on Opposition to S. 1323 Which Would Subsidize Medical Schools

PREAMBLE

A Supreme Court decision has stated that "It is hardly lack of due process for the Government to regulate that which it subsidizes." The American Medical Association consistently has held the opinion that federal aid is a "dangerous device" and so testified before the Health Subcommittee of the Senate Labor and Public Welfare Committee on May 6, 1955. More doctors of medicine now are being graduated from the 80 medical schools of this country than at any time since these schools were approved, and the quality of medical training has consistently improved until now it is the finest offered anywhere in the world. This high level of medical training and this large number of graduates from medical schools have been attained with little or no federal subsidy. Incidentally, it is recognized that the federal government is already burdened with many billions of dollars of public debt, yet S. 1323 carries an appropriation of 250 million dollars, which would further increase this debt. The federal government, under the provisions of S. 1323, would have the legal right to subsidize the cost of maintenance of the new facilities built under its provisions by allowing the applicant to set aside 20 per cent of the federal grant for "permanent endowment." Past experience has shown that the stipulations of a "temporary emergency" and "single grant" offer no protection against perpetuation, since the same philosophy was incorporated in the Hill-Burton laws which have recently been extended to 1960.

Resolved, That the House of Delegates of the American Medical Association hereby expresses strong opposition to S. 1323 notwithstanding former positions or interpretations of the bill by the American Medical Association, because it is apparent that S.1323 represents a major step toward the complete socialization of medical education and practice in this country; and be it further

Resolved, That copies of this resolution be sent to the President of the United States, members of his Cabinet, and all members of Congress.

No. 4. Resolutions on Opposition to H. R. 483 Authorizing Armed Forces to Commission Osteopaths

PREAMBLE

It is apparent that the commissioning of osteopaths in the armed forces would force servicemen of this country to submit to general medical and surgical care of osteopaths. Standards of osteopathic care are not regarded as equal to those of care by regular medical practitioners. Those who practice osteopathy do so without the educational background and clinical instruction received by graduates of accredited schools of medicine. It is our belief that the appointment of osteopaths as medical officers would endanger the health and welfare of our military personnel. It is also our belief that the appointment of osteopaths would contribute to the demoralization of career officers in the military medical service and great harm would be done to the fine military civilian consultant program, since an ethical doctor of medicine cannot voluntarily consult with osteopaths. This development would doubtless result in widespread resignations of medical officers. It also should be recognized that the appointment of osteopaths would endanger the accreditation of residency and intern training programs in military hospitals.

Resolved, That the House of Delegates of the American Medical Association does hereby go on record as opposing most vigorously H. R. 483, which would authorize the Armed Forces to commission osteopaths; and be it further

Resolved, That copies of this resolution be sent to the President of the United States, members of his Cabinet, and all members of Congress.

No. 5. Resolution on Accelerated Tax Write-Off for Private Hospital Expansion and Construction

PREAMBLE

National surveys made by such eminent authorities as Dr. John W. Cronin, Chief of the Division of Hospital Facilities of the Public Health Service, have shown that there is a rapidly increasing deficit of hospital facilities throughout the United States in spite of millions of dollars expended through the Hill-Burton Act and by various municipalities, churches, and private or individual enterprise. The Public Health Service budget for 1956 includes $125,000,000 of available funds for grants for hospital construction. Even if this full amount should be utilized, however, there would still be a deficit of over 800,000 hospital beds now needed in this country.

It is recalled that during the recent Korean conflict the Office of Defense Mobilization was set up, among other purposes, to stimulate private industry to build or to expand facilities for supplying material needed for mobilization and for the general safety, security, and well-being of our country. To accomplish this purpose, an accelerated tax write-off was allowed for such construction in many fields of industry. The need for more hospital beds in the United States is likewise a definite factor in the general safety, security, and well-being of our country. Private physicians or groups of physicians would much prefer to expand their hospital facilities at their own expense rather than to depend upon federal grants. If hospital construction can be financed by private enterprise, there will be effected a tremendous saving to the federal government. If provision were to be made for an accelerated tax write-off program to apply in the construction of private hospitals, owners of such hospitals would be greatly encouraged and stimulated to make needed expansions or to construct entirely new hospital facilities.

Resolved, That the House of Delegates of the American Medical Association recommend to Congress the enactment of proper legislation to provide for the above-described procedure of accelerated tax write-off for the costs of new construction or expansion of private hospitals, and that copies of this resolution be sent to the President of the United States, members of his Cabinet, and all members of Congress.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Willis H. Huron, Chairman, Michigan, presented the following report, which, after discussion and after a motion to substitute the original Resolution No. 3 for the committee report thereon was lost, was adopted:

Resolution No. 2 on the Narcotic Traffic.—Your reference committee has studied this resolution, and although it approves the specific principle involved, it fears that because of the many problems and possible complications, this resolution should be referred to the Committee on Legislation for further study.

Resolution No. 3 on Opposition to S. 1323.—Your committee appreciates the intent with which this resolution was introduced, but at the same time feels that there are many economic and geographical factors involved which might not make this resolution practical on a national level. Inasmuch as no evidence was offered to this committee to justify a change in the previously declared policy of the House of Delegates, your committee recommends that the previous action of this House be reaffirmed and this resolution be not adopted.

Resolution No. 4 on Opposition to H. R. 483 Authorizing Armed Forces to Commission Osteopaths.—Since the Committee on Legislation and our Washington Office have been very active in their efforts to oppose this legislation, your committee feels that continued efforts will be made without the need of this specific reference. It feels that the purpose of this resolution has already been carried out, and that this resolution is unnecessary at the present time. Your committee recommends that this resolution be not adopted.

Resolution No. 5 on Accelerated Tax Write-Off for Private Hospital Expansion and Construction.—Your reference committee agrees with the intent and principle contained in this resolution, and recommends its referral to the Committee on Legislation. Your reference committee is now cognizant of what may be a well-known fact in Texas, that the 27 per cent depletion cannot be applied to accelerated tax write-offs for private hospitals.

No. 6. Resolution on Medical Care for Civil Service Employees

Dr. Truman C. Terrell, for the Texas delegation, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

PREAMBLE

Civilian employees, under Civil Service, of various federal military installations are required to undergo yearly physical examinations (including eye examination, chest x-ray, EKG, routine laboratory procedures) by government employees at taxpayers expense. This represents another intrusion into the private practice of medicine and conceivably justifies some usage of physicians drafted into the military service; now therefore be it

Resolved, That the House of Delegates of the American Medical Association strongly oppose this practice and that copies of this resolution be sent to the President of the United States and to all members of Armed Services Committees of the United States Senate and House of Representatives.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. John K. Glen, Chairman, Texas, read the following report, which was adopted:

Your reference committee received considerable discussion on Resolution No. 6 on Medical Care for Civil Service Employees, introduced by the Texas delegation. It was felt by the reference committee that since the examination of Civil Service employees by government military medical personnel at taxpayers' expense is a *fait accompli* under Public Law 658 of the 79th Congress, 1946, and under Presidential directives of 1950, it would little avail the House of Delegates to "strongly oppose" the practice. However, because such a practice might conceivably justify some use of physicians drafted into military service, your committee recommends that this matter be referred to the Council on Medical Service that its Committee on Federal Medical Services might investigate this matter and report back to the House at the 1956 Interim Meeting.

No. 7. Resolution on Amendment to Principles of Medical Ethics, Chapter I, Section 12

Dr. Ezra A. Wolff, for the Medical Society of the State of New York, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and Bylaws:

WHEREAS, The Principles of Medical Ethics of the American Medical Association are stated in more general terms than the Principles of Professional Conduct (or Ethics) of the constituent state medical societies and/or associations; and

WHEREAS, Difference in local custom and practice often makes it necessary for the Principles of Professional Conduct (or Ethics) of the constituent state society or association to be more specific and stringent than the Principles of Medical Ethics of the American Medical Association; and

WHEREAS, The enforcement of the constituent state society's Principles of Professional Conduct (or Ethics) is a function of the state medical society; and

WHEREAS, Appeals by members against decisions of the constituent state society are only subject to review by the Judicial Council of the American Medical Association when questions of law or procedure are involved; now therefore be it hereby

Resolved, That the Principles of Medical Ethics of the American Medical Association be amended so as to add to Chapter I, which deals with general principles, a Section 12 which should read as follows:

"Sec. 12.—When the Principles of Professional Conduct (or Ethics) of a constituent state medical society or association are more specific or stringent concerning a matter of ethics than are the Principles of Medical Ethics of the American Medical Association, then the Principles of Professional Conduct (or Ethics) of the constituent state medical society or association shall be binding on all of its members if it is not inconsistent or in conflict with the Constitution and Bylaws of the American Medical Association."

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS

Dr. Jay J. Crane, Chairman, Section on Urology, read the following report, which was not adopted, and the Speaker ruled that in accordance with the provisions of the Bylaws regarding amendment of the Principles of Medical Ethics—adopted at this session of the House—the proposed amendment presented in Resolution No. 7 would be referred to the Council on Constitution and Bylaws.

Resolution No. 7.—Your committee also received Resolution No. 7 from the Medical Society of the State of New York recommending an amendment to the Principles of Medical Ethics in which it was recommended that a new Section 12 be added to

Chapter I of the Principles of Medical Ethics. Since there is a complete revision of the Principles of Medical Ethics under present consideration, your committee recommends that Resolution No. 7 be not approved.

No. 8. Resolutions on Opposition to Increase in American Medical Association Dues

Dr. John F. Burton, for the Oklahoma delegation, introduced the following resolutions, which were referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, It has come to the attention of the Oklahoma State Medical Association that the House of Delegates of the American Medical Association may discuss an increase in American Medical Association dues at its meeting in June, 1956, at Chicago; and

WHEREAS, It is understood that only 18 of the 53 constituent state and territorial medical associations have compulsory payment of the annual membership dues of the American Medical Association; and

WHEREAS, It is understood that approximately 30 per cent or more of American doctors who are members of county and state medical associations do not pay American Medical Association dues; now therefore be it

Resolved, That the House of Delegates of the Oklahoma State Medical Association firmly opposes any increase in the annual membership dues of the American Medical Association, in 1956 or any future time, so long as the payment of American Medical Association dues continues to remain optional with the great majority of the members of constituent state and territorial medical associations, and has instructed its delegates to so vote on all questions calling for an increase of American Medical Association dues; and be it further

Resolved, That this situation is inequitable, and that any necessary increase in American Medical Association dues income be derived from those doctors who are not meeting their obligation in this respect by refusing to pay such dues.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Woodruff L. Crawford, Chairman, Section on Pediatrics, presented the following report, which was adopted:

Opposition to Increase in AMA Membership Dues (Resolution No. 8).—This resolution, introduced by the Oklahoma delegation, was considered by your committee. Inasmuch as no increase in dues is contemplated at this time, your reference committee recommends that no action be taken on this resolution.

No. 9. Resolutions on Veterans Affairs

Dr. John F. Burton, for the Oklahoma delegation, introduced the following resolutions, which were referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, in many Veterans Administration hospitals the fulltime medical staff employees are rendering bills to patients treated in the veterans hospitals who are covered by Workmen's Compensation insurance and also by private medical and hospital insurance; and

WHEREAS, These fees collected are placed in various funds for the benefit of the staff; and

WHEREAS, These benefits could well be supplied by the individual employee from his salary as his brother physicians in private practice are compelled to do; and

WHEREAS, According to Veterans Administration Regulation 6047-D 1, only veterans who are financially unable to pay are eligible for treatment of non-service-connected disability in veterans hospitals; now therefore be it

Resolved, That the Oklahoma State Medical Association considers these procedures unlawful and in direct violation of Veterans Administration Regulation 6047-D 1; and be it further

Resolved, That the Oklahoma State Medical Association request the Board of Trustees of the American Medical Association to appoint immediately a committee to confer with the Veterans Administration to stop this vicious procedure and report back to the House of Delegates at its next meeting.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. John K. Glen, Chairman, Texas, submitted the following report, which, after discussion, and after a substitute motion that the Speaker appoint a committee to confer with the Veterans Administration to stop the procedures described in Resolution No. 9 was lost, was adopted:

Resolution No. 9 on Veterans Affairs.—Your reference committee listened to much discussion of this resolution. It learned again that, under the present laws of the United States, no statement that a veteran is able to pay for his medical care and/or hospitalization can supersede his own statement that he cannot pay.

Resolution No. 9 is so worded that the resolves do not actually apply to the House of Delegates. In spite of this the reference committee did not quibble about the wording of the resolution, but it did feel that if the Oklahoma delegation has valid evidence of unlawful acts on the part of directors or of employees of veterans hospitals, such evidence should be presented to the proper state or federal authorities in Oklahoma. This is so particularly because this House of Delegates does not have such evidence. Your committee recommends that Resolution No. 9 be not approved.

No. 10. Resolution on Proposed Amendment to Bylaws Concerning Composition of Board of Trustees

Dr. Millard D. Hill, North Carolina, introduced the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and Bylaws:

Resolved, That Chapter XVI, Section 1, of the Bylaws be amended by the addition of the following sentence: "The Vice President, Treasurer, Speaker and Vice Speaker of the House of Delegates shall be ex officio members of the Board with all the rights and duties of the Board without the right to vote."

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS

Dr. Jay J. Crane, Chairman, Section on Urology, read the following report, which was adopted:

Resolution No. 10.—Your committee received a resolution submitted by Dr. Millard D. Hill, delegate from North Carolina, on the subject, "Proposed Amendment to Bylaws Concerning Composition of Board of Trustees," resolving that Chapter XVI, Section 1, of the Bylaws be amended.

Your reference committee recommends the adoption of this proposed amendment to the Bylaws.

No. 11. Resolutions on Straight Internships

Dr. Ralph E. Campbell, Section on Obstetrics and Gynecology, introduced the following resolutions, which were referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, Obstetrics and gynecology has traditionally been considered as one of the four major branches of internship training; and

WHEREAS, The American Medical Association and its Council on Medical Education and Hospitals disapproved all straight internships except those in medicine, surgery, pathology, and pediatrics; and

WHEREAS, This discriminatory policy will, in many hospitals, eliminate all interns in obstetrics and gynecology, result in deterioration of patient care, and discourage the usual flow of recent graduates from internship through residency training; therefore be it

RESOLVED, That the American Medical Association through its Council on Medical Education and Hospitals review and reconsider the present policy in the matter of straight internships, and be it further

RESOLVED, That the American Medical Association and its Council on Medical Education and Hospitals abolish all straight internships in all hospitals and in all medical specialties and for all graduated medical students, and be it further

RESOLVED, That straight internships in obstetrics and gynecology be continued until such time as all straight internships in all medical specialties are simultaneously abolished.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George S. Klump, Chairman, Pennsylvania, presented the following report, which was adopted after discussion:

Resolutions Nos. 11 and 38.—These resolutions were considered together at the hearing because both deal with the type of internship that may provide the better preparation for medical practice, rotating or straight. There was a surprising unanimity of opinion that a rotating internship was preferred. Your

committee also reviewed a portion of the Annual Report on Internships and Residencies and the Medical Licensure Statistics for 1955. Fourteen boards now require a rotating internship for licensure.

Your reference committee believes that there is a growing body of opinion within the profession in favor of a rotating internship. It also recognizes the difficulties involved and the dangers to some established educational programs were action taken precipitously to disapprove straight internship, which are about 10% of the total number now approved. Your committee recommends the following substitute resolution for resolutions 11 and 38.

Resolved, (1) That the Council on Medical Education and Hospitals be requested to increase its efforts to encourage rotating internships rather than straight internships in all hospitals approved for the latter, and (2) that a report of the results of this effort be submitted annually.

No. 12. Resolution on Establishment of Inhalation Therapy Schools

Dr. W. P. Anderton, for the Medical Society of the State of New York, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, There are insufficient numbers of physicians and technicians who have been well-trained in the techniques of inhalation therapy in many parts of the United States of America; and

WHEREAS, The effective use of inhalation therapy may be the determining factor between life and death in such conditions as heart failure, coronary artery disease, asthma, atelectasis of the lungs in newborn infants, postoperative atelectasis, pneumonia, pulmonary edema, emphysema, cerebral thrombosis, and others, and

WHEREAS, "Standards of Effective Administration of Inhalation Therapy" were published in The Journal of the American Medical Association of Sept. 2, 1950, Vol. 144, pp. 23-34; and

WHEREAS, "Essentials of an Acceptable School for Inhalation Therapy Technicians" were published in the New York State Journal of Medicine of April 15, 1956, Vol. 56, No. 8, p. 1319; therefore be it

Resolved, That the Council on Medical Education and Hospitals is hereby requested to endorse such or similar "Essentials" and to stimulate the creation of schools of inhalation therapy in various parts of these United States of America.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George S. Klump, Chairman, Pennsylvania, submitted the following report, which was adopted:

Resolution No. 12.—Your reference committee approves this resolution in principle and recommends that it be referred to the Council on Medical Education and Hospitals.

No. 13. Resolution on Reimbursement for Collecting American Medical Association Dues

Dr. Charles H. Loughran, for the Medical Society of the State of New York, introduced the following resolution, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, The House of Delegates of the Medical Society of the State of New York on May 9, 1956, adopted the report of its Reference Committee on Report of Council Part XII, which stated in part: "We are concerned to note that the collection of A.M.A. dues continues to be an expense to the Society and strongly urge our Delegates to the A.M.A. to take proper steps to rectify this, either by full reimbursement by the A.M.A. to the Society, or by direct collection by the A.M.A. of its own dues"; and

WHEREAS, The collection of American Medical Association dues in 1955 cost the Medical Society of the State of New York $8,165.37; and

WHEREAS, The Medical Society of the State of New York received for expenses one half of one percent of the dues collected from the American Medical Association, to wit $2,255.96; and

WHEREAS, This causes a loss for the year 1955 of $5,909.41 to the Medical Society of the State of New York; therefore be it

Resolved, That the Board of Trustees of the American Medical Association be requested by this House of Delegates to have a study made by certified public accountants which will encompass the collection of American Medical Association dues by state and county societies and associations, with the hope that an equitable method of reimbursement of expenses will be recommended.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Woodruff L. Crawford, Chairman, Section on Pediatrics, submitted the following report, which was adopted:

Reimbursement for Collecting American Medical Association Dues (Resolution No. 13).—This resolution introduced for the Medical Society of the State of New York was carefully considered. Dr. Charles Loughran of the New York delegation and others appeared before the committee in support of this resolution and submitted a statement of collection expenses of that state society.

Your reference committee believes this whole question of expenses of collecting American Medical Association dues requires further study, inasmuch as serious dissatisfaction exists in certain areas. We therefore, support the intent of this resolution and recommend that this House of Delegates authorize the Board of Trustees to institute a study which will result in a fair and equitable reimbursement to all medical societies and associations for expenses incurred in collection of American Medical Association dues.

No. 14. Resolutions on Health Check-Up Week for Physicians

Dr. Joseph D. McCarthy, Nebraska, introduced the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The conservation of the health and the logevity of physicians have been materially imperiled because of the lack of a concerted effort on their part to be informed of their individual emotional and physical shortcomings by confreres on a professional basis; and

WHEREAS, Longevity is comparatively greater among a considerable number of other groups of people than among those of the medical profession; and

WHEREAS, The health of physicians is a precious resource of communities because of their ability to conserve the health of the people, but by neglect of their own health in too many instances their ministrations have been lost; and

WHEREAS, Physicians urge all laymen to have periodic examinations for the purpose of detecting disease in its incipiency; and

WHEREAS, Urging citizens to follow through on such a program and not adopting a similar program for themselves is not an exemplification of good preventive medicine; therefore be it

Resolved, That the House of Delegates of the American Medical Association designate a "Physicians' Health Check-Up Week" for its members, they to present themselves during that week for a history, physical examination, and clinical laboratory and radiologic procedures as well as any necessary consultations; and be it further

Resolved, That hospitals having facilities necessary to complete such studies be selected as examination centers, and that details incident to this program be outlined by the appropriate committees of the respective state medical associations for the guidance of all concerned; and be it further

Resolved, That the American Medical Association urge the accomplishment of this project through its constituent associations during a week to be designated by the House of Delegates of the American Medical Association.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Joseph C. Griffith, Chairman, Wisconsin, read the following report, which was adopted:

Resolution No. 14.—Pertaining to Establishment of a National Health Check-Up Week for Physicians.—Your committee is in agreement with the intent of this proposal, but is of the opinion that it could be more successfully carried out on a county or district level rather than by a "National Week".

No. 15. Resolutions on Undesirable Activities of Pharmaceutical Manufacturers

Dr. James Z. Appel, for the Pennsylvania delegation, introduced the following resolutions, which were referred to the Reference Committee on Amendments to the Constitution and Bylaws:

WHEREAS, A high ethical code has for many centuries afforded patients and the community a high standard of medical practice; and

WHEREAS, It is part of our medical code to exert some control over the ethical standards of all persons and organizations contributing to the care of the ill; and

WHEREAS, Some undesirable activities by groups related to the welfare of such persons are occurring; and

WHEREAS, Medicine in its efforts to protect the public condemns the over-enthusiastic and premature reports of medical treatments; and

WHEREAS, There is an increasing trend for publicizing prematurely in nonmedical publications the discovery of new drugs before they have been fully tested or even are generally available for use by physicians; and

WHEREAS, There is a growing tendency for pharmaceutical organizations to spend large sums of money entertaining members of medical societies; and

WHEREAS, There is also a growing tendency for these firms to offer funds for the training of residents and fellows in teaching hospitals in return for which research projects of new drugs and their ultimate publicity is implied; and

WHEREAS, Many faculty members of schools of medicine are in the employment of manufacturing pharmaceutical firms; therefore be it

Resolved, That these developments offer inherent dangers to advancement in medicine and lower the prestige of the practice of medicine; and be it further

Resolved, That the Board of Trustees of the American Medical Association should consider the formulation of a policy concerning relations between pharmaceutical firms and the medical profession, as well as the public, in respect to journal-space publicity concerning drugs, the granting of subsidies to medical meetings, and other allied matters.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BYLAWS

Dr. Jay J. Crane, Chairman, Section on Urology, presented the following report, which was adopted:

Resolution No. 15.—Resolution No. 15, relating to undesirable activities of pharmaceutical manufacturers was referred to this reference committee. Your committee feels that Resolution No. 15 should be not approved, and in lieu thereof recommends adoption of the following substitute resolution:

WHEREAS, In recent years events have indicated the necessity for a closer liaison between the pharmaceutical manufacturer and the American Medical Association; and

WHEREAS, In view of the tremendous number of new drugs being developed and the expanding research programs in medical colleges, clinics, and hospitals being financed by the drug industry, it is imperative that the manufacturer and the medical profession develop cooperatively guiding principles which will protect the American people from being subjected to the premature release of information pertaining to new products or techniques; and

WHEREAS, Competition within the pharmaceutical industry has become extremely keen so that in the advertising of their products drug manufacturing firms have been forced into the expenditure of larger and larger sums of money and in increasingly broader fields of advertising; therefore be it

Resolved, That the Board of Trustees of the American Medical Association appoint a liaison committee to meet with representatives of the pharmaceutical manufacturers to accomplish this objective.

No. 16. Resolutions on American Medical Association Regional Meeting

Dr. Eustace A. Allen, for the Medical Association of Georgia, introduced the following resolutions, which were referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, The American Medical Association offers to physicians an excellent scientific, ethical, legal, and public relations program twice each year; and

WHEREAS, Many physicians for various reasons cannot avail themselves of these programs; and

WHEREAS, All physicians need to know the many problems facing medicine today; and

WHEREAS, A closer relationship among physicians, medical societies, and allied organizations is essential to preserve our high medical standards; and

WHEREAS, The best way to accomplish this is through education, open forums, and personal contact; therefore be it

Resolved, That the American Medical Association through its Board of Trustees be asked to institute a series of small regional two-day meetings to supplement these semi-annual meetings. If these regional meetings meet with initial success, it is possible that the interim session, at the discretion of the Board of Trustees or the House of Delegates, could then be eliminated; and be it further

Resolved, That a trial meeting be held for the Southeastern Region in Atlanta, Ga., at a time deemed suitable by the Board of Trustees and the headquarters staff in cooperatoin with the Medical Association of Georgia.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Woodruff L. Crawford, Chairman, Section on Pediatrics, read the following report, which was adopted:

American Medical Association Regional Meetings (Resolution No. 16).—This resolution introduced for the Medical Association of Georgia requests the institution of a series of small regional two-day meetings to supplement the interim meetings. The Trustees, the Law Department, the Public Relations Department, and others confirm the fact that the American Medical Association is eager to offer assistance in furnishing speakers, material, and other support for any county, state, or regional meeting, if asked.

Your reference committee favors meetings of this type, but recommends that no action be taken for the reasons detailed.

No. 17. Resolution on Sears-Roebuck Foundation

Dr. Charles H. Richardson Sr., for the Medical Association of Georgia, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The Sears-Roebuck Foundation, through a generous grant, in conjunction with the American Medical Association served the medical profession and the public at large with research and development in health activities; and

WHEREAS, The Sears-Roebuck Foundation has specifically established a broad program in a "Plan of Assistance to Physicians Establishing Medical Practice Units"; and

WHEREAS, The Sears-Roebuck Foundation prepared and distributed "A Planning Guide for Establishing Medical Practice Units" to augment its plan of assistance; and

WHEREAS, The Sears-Roebuck Foundation has rendered a sizeable amount of financial assistance to medical practitioners throughout the United States under this plan during 1955 and will continue its assistance; therefore be it

Resolved, That the House of Delegates of the American Medical Association commend the Sears-Roebuck Foundation for this aid to medical practitioners and the people of this country.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Joseph C. Griffith, Chairman, Wisconsin, submitted the following report, which was adopted:

Resolution No. 17 commends the Sears-Roebuck Foundation for its aid to medical practitioners and the people of this country. Your committee favors the adoption of this resolution and suggests that a summary of a year's accomplishment be reported in a suitable issue of THE JOURNAL.

No. 18. Resolutions on American Medical Education Foundation and American Medical Association Dues

Dr. Spencer A. Kirkland, for the Medical Association of Georgia, introduced the following resolutions, which were referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, It has been previously approved and recommended by the Council of the Medical Association of Georgia that individual association members be strongly urged to contribute voluntarily to the American Medical Education Foundation; and

WHEREAS, The financial support of AMEF has been left to the individual discretion of each physician on a voluntary basis; therefore be it

Resolved, That the House of Delegates of the American Medical Association go on record in favor of this financial support of AMEF on a voluntary basis by individual physicians; and be it further

Resolved, That the House of Delegates of the American Medical Association opposes any compulsory assessment for this purpose and as such also opposes any raise in American Medical Association dues for allocation to the AMEF Funds.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Woodruff L. Crawford, Chairman, Section on Pediatrics, submitted the following report, which was adopted:

American Medical Association Dues and American Medical Education Foundation Support (Resolution No. 18).—This resolution introduced for the Medical Association of Georgia was considered. Your reference committee feels that the individual state medical associations should decide how their members will support the American Medical Education Foundation, and therefore recommends no action be taken on this resolution.

No. 19. Resolutions on Automobile Safety

Dr. Charles H. Richardson Sr., for the Medical Association of Georgia, introduced the following resolutions, which were referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, The medical profession has and must continue to fulfill its pledged responsibility to maintain and improve the health of the general public; and

WHEREAS, The medical profession has made outstanding advances in the art and science of medicine to the extent that the public in these United States enjoys the highest standards of health ever attained; and

WHEREAS, There is yet a medical problem of major proportion facing the profession which has been neglected; and

WHEREAS, This medical problem, the killing and maiming of people on our highways, effects more persons than does all illness known today; therefore be it

Resolved, That the House of Delegates of the Medical Association of Georgia requests the American Medical Association to lend every effort, morally and financially, to combat this problem through its Board of Trustees, councils and committees, and its constituent state medical associations; and be it further

Resolved, That the American Medical Association conceive and endorse a comprehensive program of automobile safety during 1936-37, and report to the House of Delegates at the 1937 session in New York City; and be it further

Resolved, That the American Medical Association request each constituent state medical association to set up a committee on automobile safety for similar purposes during 1936-37.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. Martyn A. Vickers, Chairman, Maine, presented the following report, which was adopted:

Automobile Safety.—Your reference committee recommends this resolution with the following changes involving the "resolves:"

Resolved, That the traffic safety committee of the American Medical Association contact the various state societies suggesting the establishment of traffic safety committees on a state and local level and that it offer whatever help the various state and local societies need in establishment of these committees; and be it further

Resolved, That the American Medical Association suggest that a cooperative effort be suggested with the various local committees established by the White House Conference on Safety; and be it further

Resolved, That if and when feasible a national meeting of the American Medical Association committee on traffic safety be held to implement the responsibilities of the medical profession in automobile safety.

No. 20.

The Speaker announced that Resolution No. 20 had been withdrawn.

No. 21. Resolutions on Department of Civil Defense Disaster Control

Dr. William F. Costello, for the Medical Society of New Jersey, introduced the following resolutions, which were referred to the Reference Committee on Medical Military Affairs:

WHEREAS, We are informed by the military that the next war in this "atomic age" will be directed against the civilian population as well as against military objectives; and

WHEREAS, The government of the United States through the Civil Defense Administration has not made proper and adquate provision for the medical needs of the civilian population in the event of an attack of such magnitude; and

WHEREAS, The personnel, facilities, and equipment already provided or contemplated can be used as readily in civil disaster caused by acts of God in our country as for catastrophy caused by enemy action; and

WHEREAS, The over-all direction of rescue and relief efforts extending over many states is a matter for federal direction and transects state boundaries; and

WHEREAS, There is no federal agency at present directly charged with the protection or relief of the civilian population affected by such natural disaster; now therefore be it

Resolved, That the establishment of a Department of Civil Defense Disaster Control in the Department of Defense of the United States be recommended, that the director of this department be given status equal to the status of the directors of the Army, the Navy, or the Air Force, and that this Department of Civil Defense Disaster Control be directly charged with the protection, rescue, and relief of the civilian population of this country from the effects of natural disaster as well as the effects of disaster resulting from enemy action; and be it further

Resolved, That the American Medical Association make its voice heard to the Congress of the United States as a proponent of this plan.

REPORT OF REFERENCE COMMITTEE ON MEDICAL MILITARY AFFAIRS

Dr. William C. Chaney, Chairman, Tennessee, submitted the following report, which was adopted:

Your reference committee has carefully reviewed Resolution No. 21 introduced by the New Jersey delegation. That resolution seeks to establish a separate Department of Civil Defense Disaster Control within the Department of Defense, having co-equal status with the Departments of the Army, Navy, and Air Force.

Your committee favors the broad objective of strengthening the federal civil defense program. However, your committee notes that legislation is currently pending in the Congress which, if enacted, would increase the status and strengthen the program. Moreover, a subcommittee of the House Government Operations Committee is and has been conducting extensive hearings on all aspects of civil defense. Your committee believes it would be more appropriate to concentrate the efforts of the Association on the medical aspects of disaster preparedness as outlined in supplementary report I of the Board of Trustees. Your committee recommends that Resolution No. 21 not be adopted.

No. 22. Resolution on Electoral Reform

Dr. George D. Johnson, for the South Carolina delegation, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The foundation of American freedom and liberty is dependent in large measure upon the right of citizens in their respective states to select the executive heads of government; and

WHEREAS, Under the present system of selecting the President and Vice President of the United States the entire electoral vote of each state is given to the candidate receiving a plurality of the votes in such state, thereby disenfranchising all voters supporting the losing candidate in each state; and

WHEREAS, Under such a system the votes of citizens do not have equal weight and value and as a result many are effectively deprived of an equal and just voice in the selection of the President and Vice President; and

WHEREAS, Bloc-voting minority groups in big city states which can throw the entire electoral vote of their respective states to one candidate or another are wielding an influence disproportionate to their numbers on the selection of candidates and party platforms and on the policies and programs of officials responsible to the entire nation; and

WHEREAS, The influence of minority bloc-voting groups is growing as populations shift from the smaller and rural states to the big city states and threatens established constitutional freedoms, individual liberty, and the capitalistic free enterprise system; and

WHEREAS, The need for a change has been recognized in a sample poll of the people by a two to one majority and by expressions by more than two-thirds of the Senate during the debate on this subject during the past year; and

WHEREAS, Of the numerous methods proposed, the so-called district plan calls for only a slight change in the Constitution and is a great improvement over the present system and would serve the purpose of improving the climate for the preservation of the Republic and the freedom and liberty of its people; and

WHEREAS, This method would encourage candidates from all sections of the nation to seek the high offices in the land, and encourage the nominees of both political parties to make every section of the country an area of contest; now therefore be it

Resolved, That the House of Delegates of the American Medical Association approve in principle the district method of electoral reform and encourage the members of Congress who are struggling with this complex subject to proceed as rapidly as practicable.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Willis H. Huron, Chairman, Michigan, presented the following report, which was adopted:

Resolutions Nos. 22 and 29.—Your committee considered these resolutions jointly and feels that because of the magnitude of the problem involved, they should be referred to the Board of Trustees for clarification and disposition.

No. 23. Resolution on Governmental Purchase of Salk Vaccine

Dr. Kenneth C. Sawyer, for the Colorado State Medical Society, introduced the following resolution, which was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health:

WHEREAS, Distribution of free Salk vaccine has been extended to include many more than the indigent group, thus constituting unnecessary government spending; and

WHEREAS, Distribution by government agencies has resulted in a bizarre, unscientific, and inequitable administration of vaccine, thereby casting disrepute on the private doctors of medicine and consternation, concern, and confusion on the public; and

WHEREAS, Those pharmaceutical houses which cooperated in the plan at great expense and trouble are being denied a reasonable recovery of their investment by the almost total purchase of the vaccine supply by the government; and

WHEREAS, A much wider and more adequate protection of the public would be attained through regular channels of distribution; now therefore be it

Resolved, That the American Medical Association requests the United States Government to return the general wholesale and retail purchase of Salk anti-poliomyelitis vaccine to normal, free enterprise, commercial channels and to cease governmental purchase of the vaccine in other than those amounts needed by the Public Health Service for essential public health needs and for distribution to the indigent population of the nation.

REPORT OF REFERENCE COMMITTEE ON HYGIENE, PUBLIC HEALTH, AND INDUSTRIAL HEALTH

Dr. Martyn A. Vickers, Chairman, Maine, read the following report, which was adopted:

Governmental Purchase of Salk Vaccine.—This Resolution No. 23 brings again to the fore governmental interference in medical practice which is contrary to the principles of the American Medical Association, and your committee therefore recommends the passage of the resolution with the deletion of the third "whereas." This is being deleted as your committee does not feel that it is the business of the American Medical Association to interfere in the financial and commercial aspects of pharmaceutical houses. Your committee further believes that the words "free enterprise" in the "resolve" should be deleted, so that the "resolve" will read as follows:

Resolved, That the American Medical Association requests the United States Government to return the general wholesale and retail purchase of Salk anti-poliomyelitis vaccine to normal, commercial channels and to cease governmental purchase of the vaccine in other than those amounts needed by the Public Health Service for essential public health needs and for distribution to the indigent population of the nation.

No. 24. Resolution on Guiding Principles for Evaluating Management and Union Health Centers

Dr. Kenneth C. Sawyer, for the Colorado State Medical Society, introduced the following resolution, which was referred to the Reference Committee on Insurance and Medical Service:

WHEREAS, The free choice of physician by the the patient has long been fundamental in the Principles of Medical Ethics of the American Medical Association; and

WHEREAS, The Principles of Medical Ethics permit the interjection of a third party between physician and patient as having a valid interest only in relation to occupational disabilities; and

WHEREAS, The language of the "Guiding Principles for Evaluating Management and Union Health Centers," published in December, 1955, over the signature of the American Medical Association, contains wording that can be construed as an abandonment by our Association of this principle of free choice of physician, since these Guides are for health centers which will care for nonoccupational illnesses and for workers' dependents as well as for occupational disabilities; and

WHEREAS, This constitutes a conflict between the Principles of Medical Ethics and the recently published Guides which must be resolved in favor of the Principles of Medical Ethics; now therefore be it

Resolved, That the Council on Medical Service and the Council on Industrial Health are jointly directed to reconsider the aforesaid manual through their joint Committee on Medical Care for Industrial Workers, to so revise the said Guides that they conform completely to the Principles of Medical Ethics, and to report to the House of Delegates.

REPORT OF REFERENCE COMMITTEE ON INSURANCE AND MEDICAL SERVICE

Dr. John K. Glen, Chairman, Texas, submitted the following report, which was adopted:

Resolution No. 24 on Guiding Principles for Evaluating Management and Union Health Centers.—Your committee is cognizant of the fact that the Principles of Medical Ethics is being revised but, even so, can see no reason why this resolution should not receive your approval, and recommends it.

No. 25. Resolution on Disapproval of Internship "One-Quarter Rule"

Dr. Gerald D. Dorman, for the Medical Society of the State of New York, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, The House of Delegates of the American Medical Association in June, 1953, approved a report of its Reference Committee on Medical Education and Hospitals to the effect that the "one-quarter rule" be established in hospitals approved for internships, and that if a hospital does not obtain one-quarter of its quota of interns for two years in succession that the internship approval be withdrawn; and

WHEREAS, Such a rule is not necessarily related to the quality of the internship program; and

WHEREAS, Such a rule could give undue advantage to the larger training hospitals; now therefore be it hereby

Resolved, That the aforesaid approval be rescinded.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George S. Klump, Chairman, Pennsylvania, read the following report, which was adopted:

Resolution No. 25.—This resolution was supported by only two members at the hearing. Your committee reviewed the theoretical application of the "one-quarter rule" for the successive years 1953-1954, 1954-1955, and 1955-1956. Any requirement of this nature must be under constant review and subject to prompt revision as experience with its operation may dictate. Since its effect cannot be measured until it has been in operation, your reference committee recommends that Resolution No. 25 be not adopted.

No. 26. Resolution on Use of Radium or Radioactive Isotopes

Dr. Carl A. Lincke, Ohio, introduced the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The House of Delegates of the American Medical Association in June, 1951, adopted a resolution supporting a recommendation that the use of radium and radioactive isotopes be under the supervision of one certified as radiology or therapeutic radiology; and

WHEREAS, The states license physicians to use all drugs and agents useful in the diagnosis and treatment of diseases; and

WHEREAS, The boards of certification are private organizations without legal status to regulate the practice of medicine; and

WHEREAS, No drug or agent that is useful or may become useful in the diagnosis or treatment of diseases should be limited in its use to physicians with special interests or in limited fields of practice; and

WHEREAS, Radioactive isotopes have already been proved and are continuing to be proved by physicians of widely diverse interests to have extraordinarily wide and unique applications as clinical biochemical tools and drugs that are useful in the diagnosis or treatment of diseases; and

WHEREAS, Physicians will not wish to engage in any practices that remove incentive or stifle initiative to discover new applications or to improve existing applications of radioactive isotopes in the diagnosis or treatment of diseases; and

WHEREAS, The history of medicine is replete with examples of advances in the art and science of medicine made by individual physicians regardless of their special interests and training; and

WHEREAS, The new thoughts and discoveries that originate in the minds of men are often revealed in the nature of acts of God and as manifestations of divine inspiration; and

WHEREAS, The House of Delegates of the Ohio State Medical Association is on record recommending that the action of the American Medical Association House of Delegates in June, 1951, should be rescinded; now therefore be it

Resolved, That the action taken by the House of Delegates of the American Medical Association in June, 1951, is hereby rescinded to remove any barrier which may now exist to the use of radium or radioactive isotopes by any physician consonant with the practices established among his fellow physicians of his community.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Joseph C. Griffith, Chairman, Wisconsin, presented a report regarding Resolution No. 26. After discussion and amendment, the House of Delegates adopted the following: "That the Speaker of the House of Delegates appoint a committee to study the use of radioactive isotopes and other materials and to report to the Board of Trustees prior to the next clinical meeting at Seattle."

No. 27. Resolution on Joint Commission on Hospital Accreditation

Dr. L. Howard Schriver, Ohio, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, The objective of the Joint Commission on Accreditation of Hospitals is to enable physicians and hospitals to aid each other in the delivery of the best possible medical care to patients; and

WHEREAS, Certain regulations enacted by the Joint Commission on Accreditation of Hospitals and their interpretation by representatives of the Joint Commission make it unnecessarily difficult to achieve the above objective; and

WHEREAS, There is reason to believe that certain unnecessary requirements are leading to an increase in hospital costs without a commensurate increase in the quality of professional and hospital care of patients; now therefore be it

Resolved, That the House of Delegates of the American Medical Association recommends:

(1). That the Joint Commission on Accreditation of Hospitals revise its standards in order to provide more discretion locally for medical staffs and hospital authorities to make appropriate adjustment of their organization activities to fit the hospital's particular needs and those of the community;

(2). That hospital staffs be permitted to determine for themselves how often they need to hold staff meetings and what kind of meeting is best suited to solve the problems of the individual hospital;

(3). That accreditation never be withdrawn by the Joint Commission from a hospital in which questionable standards prevail until after a period of three to six months has expired and an opportunity has been given to the hospital to raise its standards within the period specified;

(4). That the Joint Commission of Accreditation of Hospitals and the Council on Medical Education and Hospitals of the American Medical Association shall maintain close liaison to assure that hospitals with teaching programs for interns and residents shall be continuously advised as to the rules and regulations of both agencies in order to avoid a situation whereby a hospital with a satisfactory training program might lose its accreditation;

(5). That the American Medical Association, other interested national groups, and state and county medical societies be urged to publicize more adequately the activities of the Joint Commission on Accreditation of Hospitals so that the medical profession and hospital authorities will have a better understanding of the Commission's purposes, policies, regulations, and their interpretation.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George S. Klump, Chairman, Pennsylvania, submitted the following report, which was adopted:

Resolution No. 27.—The introducer of this resolution discussed it in connection with the Stover report and agreed that the latter covered the issues emphasized in Resolution No. 27. Dr. Kenneth B. Babcock, Chairman, Joint Commission on Accreditation of Hospitals, stated that he is recommending to the Commission that the "accredited" and "provisionally accredited" categories be abolished in favor of only one "accredited." Hospitals formerly provisionally accredited will be listed as accredited and will have a one year probationary period.

Your reference committee believes that no action is indicated on Resolution No. 27, and it so recommends.

No. 28.

Resolution No. 28 was withdrawn at the request of Dr. Charles L. Leedham, Section on Military Medicine.

No. 29. Resolutions on Improving Electoral College System

Dr. John K. Glen, for the Texas delegation, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

PREAMBLE

The present so-called Electoral College System of electing the President and Vice President of the United States was started decades ago under conditions greatly different from those existing in the United States today. The original conception was to provide a group of leading citizens of the country who would then impartially select the most capable men available for the offices. In practice it has now come to where theoretically it is possible for comparatively small groups in one or more states to exert a disproportionate influence in the selection of the chief executives of our country. Certainly the existing system does not give a true measure of the opinions of the majority of the voters. Several sincere attempts have been made in Congress to improve the Electoral College System, but so far no actual bills have passed the Congress.

Resolved, That the House of Delegates of the American Medical Association again urges the Congress of the United States to consider and make provision for some more equitable plan of electing the President and Vice President of the United States; and be it further

Resolved, That a copy of this resolution be sent to the President of the United States, to the members of his Cabinet, and to all members of Congress.

NOTE: The report of the Reference Committee on Legislation and Public Relations on Resolution No. 29 will be found following Resolution No. 22.

No. 30. Resolutions on Nationwide Commission to Study Social Security System

Dr. John K. Glen, for the Texas delegation, introduced the following resolutions, which, together with Resolution No. 31, immediately following, also introduced by Dr. Glen for the Texas delegation, were referred to the Reference Committee on Legislation and Public Relations:

PREAMBLE

The House of Delegates of the American Medical Association at its Boston meeting last November urged the Senate of the United States not only to reject H.R. 7225, but also to provide for a special Commission to Study the Social Security System, to be made up of citizens from all walks of life, as businessmen, professional groups, educators, social welfare leaders, financiers, and legislators. This special Commision would then be comparable to the so-called "Hoover Commission" that made a comprehensive study of governmental functions in recent years. The majority of individuals of groups who testified before the Finance Committee of the Senate in the hearings on H.R. 7225, urged the appointment of such a wide-based commission, but apparently such a recommendation has not been made to the Senate. There is still ample time for the Senate to take action, however.

Resolved, That the House of Delegates of the American Medical Association recommends and urges to the Congress of the United States the appointment of a nationwide Commission to Study Social Security with ample time to be allotted for the study and with provision for a full report of the findings and recommendations of the Commission to the entire country; and be it further

Resolved, That a copy of this resolution be sent to the President of the United States, to the Members of his Cabinet, and to all members of the Congress.

No. 31. Resolutions on Participation in Local Committees to Study the Social Security System

PREAMBLE

In recent months there has been a tremendous upsurge of interest among the general public in the Social Security System, largely because of the widely-publicized hearings befote the Finance Committee of the Senate in regard to H.R. 7225. It has been pointed out from many angles that there has never been adequate study or proper publicity to the expanded philosophy and ultimate liabilities of the Social Security System. Inasmuch as the System is now involving personally a large majority of United States citizens, it is highly in order that intelligent citizens learn more about the philosophy and ultimate extent of the System. Physicians are citizens who can urge noonday service clubs, women's clubs, and similar citizens' discussion groups all over the country to make a special study of the Social Security System, even to the point of forming coordinated committees to study the social security system in every community.

Resolved, That the House of Delegates of the American Medical Association suggest and urge public-spirited citizens in all localities to make special study of the Social Security System, preferably through citizens' groups organized in each locality as may seem best; and be it further

Resolved, That a copy of this resolution be furnished to the press of this country, and that a copy be sent to each constituent state and territorial medical association with the suggestion that it be widely publicized within its area.

REPORT OF REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS

Dr. Willis H. Huron, Chairman, Michigan, read the following report, which was adopted:

Resolutions Nos. 30, 31, and 39 on Social Security.—Inasmuch as these resolutions reaffirm the position of this House of Delegates taken at the Interim Session in Boston in December, 1955, your committee recommends their approval.

No. 32. Resolutions on Possible Variation of Standards of Accreditation for Hospitals According to Size

Dr. John K. Glen, for the Texas delegation, introduced the following resolutions, which were referred to the Reference Committee on Medical Education and Hospitals:

PREAMBLE

Definite hardships continue to be incurred by small hospitals in their sincere attempts to qualify for accreditation by the Joint Commission on Accreditation of Hospitals. This is due primarily to the fact that the smaller hospitals do not have access to the facilities available to large, and particularly to primarily teaching, hospitals. The purpose of standardization is to insure competent medical care of patients in hospitals, and smaller hospitals with conscientious, capable men on their staffs can render high-standard medical care without necessarily meeting all the present detailed requirements for accreditation. It should be possible for the Joint Commission to divide hospitals into classes according to size or other factors, as Class A, Class AA, Class AAA, etc., where without any unfavorable comparison, but purely on a matter of size, hospitals would be expected to meet proper standards to insure adequate medical care for patients.

Resolved, That the House of Delegates of the American Medical Association recommend to the representatives of medical organizations on the Joint Commission on Accreditation of Hospitals, the institution of such a classification of hospitals according to size or other fair factors, in the way of setting standards of requirements for accreditation; and be it further

Resolved, That a copy of this resolution be sent to all members of the Joint Commission on Accreditation of Hospitals and to all state and territorial medical associations.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George S. Klump, Chairman, Pennsylvania, presented the following report, which was adopted:

Resolution No. 32.—The intent of Resolution No. 32 appears in the Stover Report, Section F (6): ". . . it is recommended that the Commission give serious consideration to establishing standards which may vary depending upon the size of the hospital. Each hospital should be judged on its own merits and efficiency, regardless of size."

Your reference committee recommends that no action be taken on Resolution No. 32, but wishes to emphasize the importance of flexibility and judgment in the application of any set of standards to a particular local situation.

No. 33. Resolution on the Guide to Grievance Committees

Dr. Arthur A. Lampert, South Dakota, introduced for the South Dakota State Medical Association, the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Grievance committee activity has become such an integral part in the medical profession's public relations, and will continue to represent one of the more important points of contact between physicians and patients; and

WHEREAS, The Guide to Grievance Committees as published by the Department of Public Relations has been a great help to all the state associations' grievance committees, but falls short of providing actual interchange of ideas and methods of mediation of grievances; and

WHEREAS, Such interchange of ideas and methods of mediation of grievances would serve to aid in establishing uniformity of investigating and mediating procedures, thereby providing both patients and physicians uniform rights of expectancy of consideration; therefore be it

Resolved, That the American Medical Association consider regional or national conferences of state grievance committees and state executive secretaries to permit active interchange of investigative and mediating procedures, such interchange serving to promote a uniform right of expectancy of treatment of grievances to both patients and physicians.

REPORT OF REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. Joseph C. Griffith, Chairman, Wisconsin, submitted the following report, which was adopted:

Resolution No. 33, proposes that regional and national conferences of state grievance committees and executive secretaries be set up to interchange ideas as to medical procedures. Your committee is informed that Dr. Culpepper's committee, which has published the Guide to Grievance Committees is actively preparing an appendix which will contain a wealth of material to serve the purpose of this resolution. Your committee does not recommend its adoption.

No. 34. Resolution on Lectures on Medical Ethics

Dr. C. J. Attwood, for the California delegation, introduced the following resolution, which was referred to the Reference Committee on Medical Education and Hospitals:

WHEREAS, In these times of increasing pressure, close scrutiny, and greater demands, it is of paramount importance that relations between physicians as well as patient-physician relationships reflect the highest credit on the physician and on the medical profession; now therefore be it

Resolved, That the American Medical Association be urged to request each medical school to assign a member of the clinical faculty to give at least three hours of formal lectures on medical ethics, professional conduct, and manners each year to members of the senior class.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Dr. George S. Klump, Chairman, Pennsylvania, submitted the following report, which was adopted:

Resolution No. 34.—Lectures on medical ethics and related matters are now given in all but six of the four year schools and three of the schools of basic medical sciences as announced in the fifty-fifth Annual Report on Medical Education in the United States and Canada by the Council on Medical Education and Hospitals. Nevertheless, this resolution is most timely and there was considerable discussion at the hearing including that by a delegate from the Student American Medical Association which was greatly appreciated.

Your reference committee wishes to call the attention of the House to the important role that component county medical societies should assume in indoctrinating both the student and the young graduate in these matters. It recommends the adoption of this resolution.

No. 35. Resolution on Advertising Standards

Dr. C. J. Attwood, for the California delegation, introduced the following resolution, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

WHEREAS, A year ago the American Medical Association discontinued the awarding of Council seals and advertising emblems to products and advertising copy which met acceptance requirements, and

WHEREAS, Increased pressure is sometimes being brought in the placing of advertising copy by the advertisers; and

WHEREAS, It is the duty and the prerogative of each medical society to maintain high standards for the acceptance of advertising copy in its official publications; and

WHEREAS, Some journals have established rules governing the acceptance of advertising copy; now therefore be it

Resolved, That the American Medical Association urge county and state medical societies independently to adopt advertising rules which are based on high standards of quality of product and proven accuracy of the advertising.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF BOARD OF TRUSTEES AND SECRETARY

Dr. Woodruff L. Crawford, Chairman, Section on Pediatrics, read the following report, which was adopted:

Advertising Standards (Resolution No. 35).—This resolution on advertising standards for medical publications was considered favorably with these editorial changes:

Resolved, That the American Medical Association recommends that county and state medical societies adopt advertising rules which are based on high standards of quality of product and proven accuracy of the advertiser.

(To be continued)

MEDICAL NEWS

ARKANSAS

Society Election.—At a recent meeting of the Arkansas Radiological Society, Dr. Edwin F. Gray, Little Rock, was elected president; Dr. Joseph A. Norton, Little Rock, vice-president; and Dr. Ernest A. Mendelsohn, Fort Smith, secretary-treasurer.

CALIFORNIA

General Practice Meeting in Los Angeles.—The eighth annual scientific assembly of the California Academy of General Practice will convene at the Hotel Statler, Los Angeles, Oct. 14-17. Dr. Manuel E. Lichtenstein, associate professor of surgery, Northwestern University Medical School, Chicago, will present "Gall Bladder Disease and Its Surgical Treatment" and "Nonpenetrating Injuries of the Abdomen." Dr. Clarence S. Livingood, chief, dermatology division of Henry Ford Hospital, Detroit, will speak on "Diagnosis and Management of Dermatitis." "When Should Parents Leave Home?" will be the topic of Dr. Edward J. Stieglitz, consultant in geriatrics to the Veterans Administration, Washington, D. C. Dr. Sidney Farber, professor of pathology, Harvard Medical School, Boston, will discuss "Advances in the Chemotherapy of Cancer." "Emergency and Aftercare of Burns" will be discussed by Lieut. Col. Curtis P. Artz, formerly director of the surgical research unit, Brooke Army Medical Center, Fort Sam Houston, Texas. The Ivan C. Heron Lecture will be presented by Dr. Christopher J. Duncan of Brookline, Mass., on "Reducing Complications in Total Abdominal Hysterectomy." Dr. Richard W. TeLinde, Baltimore, will give the Stanley R. Truman Lecture on "The Problem of Endometriosis."

COLORADO

Alpha Omega Alpha Lecture.—The annual Alpha Omega Alpha Lecture of the University of Colorado School of Medicine, Denver, will be presented in the Sabin Amphitheater, Oct. 12, 8 p. m. on "Newer Concepts in the Healing of Wounds" by Dr. J. Englebert Dunphy, professor of surgery, Harvard Medical School, Boston. Physicians are invited to attend.

DISTRICT OF COLUMBIA

Personal.—Dr. Henry L. Darner, clinical professor of obstetrics and gynecology, George Washington University School of Medicine, Washington, D. C., was awarded the honorary degree of doctor of science by Western Maryland College, Westminster, Md., at commencement exercises June 4. Dr. Darner is chief gynecologist at the Central Dispensary and Emergency Hospital, and senior attending gynecologist at Garfield Memorial Hospital.

FLORIDA

General Practice Meeting in Jacksonville.—The seventh annual scientific assembly of the Florida Academy of General Practice will convene Oct. 20-21 at the Hotel Roosevelt, Jacksonville, under the presidency of Dr. Leo M. Wachtel, Jacksonville. The following program will be presented Saturday morning:

Modern Drug Treatment of Tuberculosis, Howard M. Dubose, Lakeland, representing the Florida Trudeau Society.
Emotional Problems of the Young Adult, H. Keith Fischer, Philadelphia.
Prevention and Treatment of Traumatic Injury in Athletes, A. Lee Lichtman, New York.
Cutaneous Manifestations of Internal Disease, E. Richard Harrell, Ann Arbor, Mich.
Management of Ulcerations of Stomach and Duodenum, Alton Ochsner, New Orleans.

The morning speakers will participate in the afternoon session, which will consist of questions and answers and a roundtable discussion on "Emotional Problems in General Practice," moderated by Dr. Fischer. At the banquet, 8:30 p. m., Dr. Ochsner will consider "The Influence of Serendipity on Medicine." The following symposium on automobile safety is scheduled for Sunday morning:

Law Enforcement and Its Bearing on Accidents (film) and The Perfect Crime, Trooper D. R. Jansen, Florida Highway Patrol.
Total Treatment of Crash Injury Victim, Preston A. Wade, New York.
Psychiatric Aspects of the "Accident-Prone" Driver, Lieut. Frederick L. McGuire, head of psychology department, U. S. Naval Hospital, Philadelphia.
Safety Features of the Modern Automobile, Fletcher N. Platt, Ford Motor Company, Dearborn, Mich.

After luncheon a recapitulation by Mr. John O. Moore, director of automobile crash injury research, Cornell University Medical College, New York, will be followed by panel discussion, with Mr. Moore as moderator.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

GEORGIA

Postgraduate Medical Sessions.—The Emory University School of Medicine, Emory University, will sponsor a postgraduate session on "Cardiac Arrhythmias," Oct. 19-20, in the physiology building. Two-day meetings will be held also in December, March, and May for the discussion, respectively, of liver diseases, electrolytes, and common diseases of the blood. Programs will be given by visiting and local specialists and will include lectures, round-table discussions, and presentation of patients. Dr. J. Willis Hurst, associate in medicine at Emory, is program director. Guest lecturers at the October session include Dr. Herman K. Hellerstein, Western Reserve University School of Medicine, and assistant physician, University Hospitals of Cleveland; Dr. Robert P. Grant, formerly of Emory, now of the National Heart Institute, Bethesda, Md.; and Dr. W. Proctor Harvey, Georgetown University Medical Center, Washington, D. C. Drs. R. Bruce Logue and Noble O. Fowler of Emory University and Atlanta will be among others participating. The first lecture on normal and abnormal heartbeat will be given at 8:40 a. m. Friday by Dr. Hellerstein, who will also deliver a lecture on cardiac arrest in the operating room, Saturday at 11 a. m. Sessions will meet all day Friday and Saturday morning. Registration is limited. The registration fee is $20, but interns and residents will be admitted without charge.

ILLINOIS

Society News.—The Illinois Society of Pathologists recently elected Dr. Dennis B. Dorsey, Danville, president; Dr. James W. Henry, Evanston, vice-president; Dr. Herbert P. Friedman, Urbana, second vice-president; and Dr. Frederick C. Bauer Jr., Chicago, secretary-treasurer.

Chicago

Orthopedic Society Meeting.—The Chicago Orthopaedic Society will meet at the Palmer House, Oct. 12. Dinner at 6:45 p. m. will precede the following program:

Contrast Arthrography of the Shoulder, Graham Kernwein, Rockford.
Fractures of the Elbow in Children, Donald J. Maylahn, Chicago.
Discography in Diagnosis of Disorders of Intervertebral Discs, John J. Davies, Moline.

All physicians are invited to attend the scientific program.

Personal.—Dr. Joseph B. Kirsner, professor of medicine, University of Chicago School of Medicine, participated in the fifth International Congress of Gastroenterology, London, England, July 18-21, where he discussed "Exfoliative Cytology of the Colon in Ulcerative Colitis" and the use of adrenal steroids in the treatment of ulcerative colitis.—Dr. Tibor Benedek, assistant clinical professor of dermatology, Stritch School of Medicine of Loyola University, has been promoted to associate clinical professor in the department of dermatology.

Society News.—Newly elected officers of the Chicago Society of Industrial Medicine and Surgery include Dr. Cornelius M. Annan, president; Dr. Kenneth F. Stotz, vice-president; Dr. Billie B. Hennan, secretary; and Dr. Charles M. Drueck, treasurer.

Larger Plans for Presbyterian–St. Luke's Hospitals.—The Presbyterian–St. Luke's Hospital of Chicago was recently formed by merger of the two long-established hospitals. Each institution will continue to operate in its present location for about three years, when an 11-million-dollar expansion program will have been completed at Presbyterian Hospital in the West Side Medical Center, where the new, integrated hospital will be located. Ground-breaking ceremonies for an addition to Presbyterian were held March 20; but with announcement of the merger, plans were enlarged to include a 14-story wing, a doctors' building with private offices, a 160-unit apartment for professional personnel, and an annex for diagnostic self-service beds for patients not requiring complete nursing service. The school of nursing will be expanded also to accommodate 350 students. The new wing will include an enlarged x-ray department with a cobalt beam apparatus for cancer treatment, a floor for care of neuropsychiatric patients, an enlarged central supply, a 225-seat lecture room, and a chapel. It is anticipated that the merged hospitals will ultimately have a capacity of over 1,000 beds. At present St. Luke's has 553 beds and Presbyterian, 418. Dr. Karl S. Klicka, director of Presbyterian Hospital for two years has been appointed director of Presbyterian–St. Luke's. He is a member of the executive committee of the health division of the Chicago Welfare Council; member of the advisory committee, Chicago Hospital Council; and chairman of the Illinois Joint Commission for Improvement of Patient Care.

INDIANA

State Medical Meeting in Indianapolis.—The 107th annual meeting of the Indiana State Medical Association will be held in Indianapolis, Oct. 15-18 under the presidency of Dr. Walter U. Kennedy, New Castle. On Tuesday there will be reference committee meetings, the opening of the technical and scientific exhibits, the golf tournament and the trap-skeet shoot. The stag party and general entertainment will be held that evening. On Wednesday panel discussions and symposiums are scheduled on Radioisotopes in Diagnosis and Treatment of Thyroid Diseases, Parent Counseling for the Oversolicitous Parent and Caring for the Normal and Abnormal Infant, Backache, Industrial Dermatoses and Poisonings, Acute Renal Failure, Conservation of Vision, Alcoholism, Diabetes, Obstetrics, and Hypnosis. Wednesday night will be President's Night, with the president's address and entertainment in the Murat Theater. Thursday a symposium on "Carcinoma of the Breast" is scheduled for 10:30 a. m. Thursday afternoon the section on general practice will have as guest speaker Dr. Walter C. Alvarez, Chicago, who will talk on "The Minor Variances of Epilepsy." The annual banquet will be held Thursday night.

KANSAS

Personal.—Dr. Ralph I. Canuteson, director of student health services at the University of Kansas, Lawrence, since 1928, has been given a Fulbright research award. He plans to do research in the field of college health at the University of Oslo, Norway, in 1957.

MICHIGAN

Dr. Miller to Direct Institute of Industrial Health.—Dr. Seward E. Miller has been granted a leave of absence from the U. S. Public Health Service to accept, effective Sept. 1, the directorship of the University of Michigan's Institute of Industrial Health. Dr. Miller has been an officer of the Public Health Service since 1933, his first 12 years having been spent in clinical pathology in service hospitals in various parts of the country, and the next five years in the service's Communicable Disease Center, Atlanta, Ga., where he developed training programs for physicians and technicians in laboratory diagnostic medicine. For the last two years he has been chief of the division of special health services, which includes activities in the fields of occupational health, chronic diseases, tuberculosis, heart disease, and venereal disease control. Dr. Miller will also receive teaching appointments in industrial health in the University of Michigan's schools of Medicine and Public Health. He is the editor of "The Textbook of Clinical Pathology," now in its fifth edition.

Symposium on Endocrines and Nutrition.—A Symposium on Endocrines and Nutrition will be held in the amphitheatre of the Horace H. Rackham School of Graduate Studies, Ann Arbor, Oct. 11-12. Dr. Frank H. Bethell, Ann Arbor, will serve as chairman for the morning session, and Halvor N. Christensen, Ph.D., Boston, for the afternoon session Thursday. Presentations will include the following:

Effects of Dietary Factors on Production of Adrenal Steroids, Albert B. Eisenstein, St. Louis.
Effect of Liver Disease on Adrenal Cortical Function, Frank H. Tyler, Salt Lake City.
Primary and Secondary Aldosteronism, Jerome W. Conn, Ann Arbor.
Effect of Endocrines on Vitamin Requirements, Joseph Meites, Ph.D., East Lansing.
Newer Concepts on the Action of Insulin, William C. Stadie, Philadelphia.
Effects of Growth Hormone on Protein and Carbohydrate Metabolism, Jane A. Russell, Ph.D., Atlanta, Ga.
Effects of Endocrine Glands and Stress on Fatty Acid and Ketone Metabolism, Frank L. Engel, Durham, N. C.
Relationship of Vitamin B12 to Carbohydrate Metabolism and Diabetes, Bacon F. Chow, Ph.D., Baltimore.
Metabolic Effects of Aryl Sulfonylurea Compounds in Normal and Diabetic Subjects, Stefan S. Fajans, Ann Arbor.

Dr. William D. Robinson will serve as chairman for the Friday session, which will include the following presentations:

Goitrogens in Food as a Cause of Goiter, Monte A. Greer, Portland, Ore.
Influence of the Pituitary and Adrenals on Digestive Functions, Burton L. Baker, Ph.D., Ann Arbor.
Influence of the Pituitary on Hemopoiesis, Roger C. Crafts, Ph.D., Cincinnati.
Control of Erythropoiesis by Humoral Factors, Albert S. Gordon, Ph.D., New York.

All persons attending the symposium are requested to register (no fee). Information may be obtained from The Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, or the National Vitamin Foundation, Inc., 15 E. 58th St., New York 22.

Health Conference in Detroit.—A Regional Health Conference for the Wayne County area will be held Oct. 10 at the Garden City High School, Detroit, with the co-sponsorship of the Michigan Health Council of Lansing. The keynote speaker will be Dr. John S. DeTar, Milan, president of the American Academy of General Practice.

MINNESOTA

Personal.—Dr. Theodore A. Clifton, Chatfield, recently retired after 46 years in the practice of medicine. Dr. and Mrs. Clifton will now make their home in Hollywood, Fla.

MISSOURI

Hospital News.—Dr. Raymond O. Muether, associate professor of internal medicine at St. Louis University School of Medicine, has been elected president of the staff of the St. Mary's Group of Hospitals of St. Louis University. The other newly elected officers are Dr. Grey Jones, assistant professor of clinical gynecology and obstetrics, vice-president; and Dr. Paul Murphy, associate professor of clinical medicine and chief of the section of chest diseases, secretary. These new offices were planned "to increase the participation of staff in the professional policies of the hospital."

New Headquarters for Academy of General Practice.—The new national headquarters building of the American Academy of General Practice in Kansas City was dedicated on Sept. 1. The principal speaker was Dr. Dwight H. Murray, Napa, Calif., President of the American Medical Association. In the $600,000, four-story reinforced concrete building, at the corner of Volker and Brookside boulevards, will be offices of the staff of the academy and the editorial and business offices of its monthly publication, *GP* magazine. It contains 30,000 square feet of floor

space and plans permit vertical or horizontal expansion. The first-floor lobby of the T-shaped building is of terrazzo and Lido marble, imported from French Morocco. Tempered glass stairway panels and a custom-designed brass candelabra complete the lobby decor. The main conference room has African cherry wood paneling, electrically operated draperies, a custom-built fruitwood conference table, and a portrait of the late Sir Alexander Fleming, discoverer of penicillin and an honorary member of the academy. The original culture from which penicillin is derived is on display in the conference room. The second floor lobby will overlook the new Milnes fountain and the planned esplanade leading from Volker Boulevard to the steps of the Nelson Gallery of Art. The basement floor includes a kitchen, an employees' dining room, a second conference room that can accommodate 200 people, and automatic addressing equipment. The subbasement will be used for inactive files and storage. Landscaping plans include a fountain, a courtyard, and a patio.

New American Academy of General Practice headquarters.

NEW JERSEY

Orthopedic Society Meeting.—The fall meeting of the New Jersey Orthopedic Society will be held at the Hunterdon Medical Center, Flemington, Oct. 13, 10 a. m.-4 p. m., and will be open to all physicians. Included in the program will be a paper by Dr. Edward Schlesinger on "The Problem of Leverage Above Spinal Fusions." Dr. Joseph W. Fielding will present "Cinefluorography of the Cervical Spine," and Dr. A. Hudacek will speak on "Production of Pigmented Villonodular Synovitis in Laboratory Animals." The remainder of the day will be devoted to business and social activities of the society, and will be open only to members.

NEW YORK

Personal.—Dr. Harry C. Storrs, director of Letchworth Village, Thiells, for the past 19 years, retired June 30 after 44 years of service in the department of mental hygiene.

Course on Fluid and Electrolyte Therapy.—The University of Buffalo School of Medicine will present a postgraduate course on Fluid and Electrolyte Therapy in Medicine, Surgery, and Pediatrics, Oct. 18 at Meyer Memorial Hospital (K Building Conference Room). Drs. Charles U. Lowe, George E. Miller, Worthington G. Schenk Jr., and Robert Tarail, all of the school of medicine, will participate in "Typical Problems in Fluid Therapy: Case Presentations" at 9 a. m. Dr. Miller will present "Units of Measurement" at 10 a. m., followed by "Common Pitfalls" by Dr. Tarail, "General Principles of Fluid and Electrolyte Therapy" by Drs. Lowe and Tarail, and "Materials and Methods" by Dr. Schenk. A panel discussion and question period on "Clinical Management of Fluid and Electrolyte Problems" will be held at 2:30 p. m. in Room G7, Capen Hall, University of Buffalo. All registrants for the course are invited to attend the Harrington Lecture, "Thirst—The Acquisition of Water: Its Significance in Relation to the Volume and Composition of the Body Fluids," by Dr. Maurice B. Strauss, professor of clinical medicine, Boston University School of Medicine, at 4:30 p. m. in Room G22 of Capen Hall. Fee for the course is $15. Checks should be made payable to the University of Buffalo, and registration forms sent to Dr. Milton Terris, Assistant Dean for Postgraduate Education, University of Buffalo School of Medicine, 3435 Main St., Buffalo 14.

New York City

Harvey Lecture.—The second Harvey Lecture in the 1956-1957 series will be delivered Oct. 11, 8:30 p. m. at the New York Academy of Medicine, 103rd Street and Fifth Avenue by Dr. David Bodian, Johns Hopkins University School of Medicine, Baltimore, on "Physiologic Aspects of Infectious Processes in Poliomyelitis."

Graduate Program in Obstetrics and Gynecology.—Columbia University College of Physicians and Surgeons has established a program in its department of obstetrics and gynecology directed toward the training of academic personnel for full-time work in departments of obstetrics and gynecology. The program, supported by the Josiah Macy Foundation, provides for the financial support of a few individuals with scientific orientation over a five-year period following their internships. The student will spend the first two years in one of Columbia's basic medical science departments learning more about scientific thinking and techniques, and will devote the subsequent three years to residency training in the department. Individuals in this program will receive approximately $4,000 annually during the first two years and augmentation of the usual hospital residency stipend to maintain this income level during the last three years. This program aims to attract individuals with definite interest in full-time teaching and investigation in this field.

Symposium Day on Diabetes.—"Insulin, Glucagon and the Oral Hypoglycemic Sulfonylureas" will be the topic for the fourth annual symposium day, Oct. 12 (Auditorium, Hunter College, 695 Park Ave.) sponsored by the New York Diabetes Association (270 Park Ave.). Dr. James F. Hart is president of the association. The following program will be presented:

Cell Types in the Islets of Langerhans and the Hormones They Produce, Arnold Lazarow, Minneapolis.
Locus of Action of Insulin, DeWitt Stetten Jr., Bethesda, Md.
Chemical Structure of Glucagon, William W. Bromer, Ph.D., Indianapolis.
Physiologic Role of Glucagon, George E. Anderson, Brooklyn.
Pathologic Effects of Large Amounts of Glucagon, J. M. Salter, Ph.D., I. W. F. Davison, B.Sc., and Charles H. Best, Toronto, Canada.
A Sequential Appraisal of Glucagon, Herbert M. Evans, Berkeley, Calif.

The afternoon session will include the following presentations:

Historical Review of Oral Substitutes for Insulin, Martin G. Goldner, Brooklyn.
Mechanism of Action of the Sulfonylureas, Rachmiel Levine, Chicago.
Studies on the Action of the Sulfonylureas, Robert W. Cox and Robert H. Williams, Seattle.
Clinical Effects of the Sulfonylureas, Max Miller, Cleveland.

The closing discussion will be led by Dr. Best. Drs. Harold Brandaleone and Irving P. Graef will preside over the morning and the afternoon session, respectively. The symposium is supported by a grant-in-aid from Eli Lilly and Company. The evening program will be held at the New York University Club, 123 W. 43rd St., where cocktails (6:45-7:15 p. m.) will precede dinner ($8 per person; informal dress). The after-dinner speaker, Dr. Herbert M. Evans, director emeritus, Institute of Experimental Biology, University of California Medical School, Berkeley-San Francisco, will have as his topic "What Doctors Have Written."

PENNSYLVANIA

Leaflets on Sight Saving.—The Pennsylvania Association for the Blind has published two new leaflets: (1) "Take Time to See," which discusses correct lighting, reading and other close work, and aids to vision, and presents TV hints; and (2) "Cross-Eyes," which gives signs, causes, and correction. Samples of these folders are available on request to the Philadelphia Foundation for the Blind, 100 E. Price St., Philadelphia 44.

Philadelphia

Symposium on Air Pollution.—A public symposium, "Cleaner Air for Urban Areas," will be held at the Franklin Institute Oct. 15. The symposium, coordinated with Philadelphia's "Cleaner Air Week" (Oct. 21-27), will feature exhibits of equipment used in air pollution research and control and a tour of the institute's air pollution research laboratory. The fee for symposium registration will be $15, payable to the Franklin Institute. Mail should be addressed to Cleaner Air Symposium, The Franklin Institute, 20th and Parkway, Philadelphia 3.

Symposium on Faith and Healing.—The Section on Medical History, College of Physicians of Philadelphia, will present a symposium, "Faith and Healing: Origins of Psychosomatic Medicine," at the College Hall, 19 S. 22nd St., Oct. 9, 8:30 p. m. Dr. Lewis C. Scheffey, president of the college, will preside. Speakers will include Dr. Nicholas Padis, chairman, section on medical history, College of Physicians of Philadelphia; Dr. Kenneth E. Appel, professor of psychiatry, University of Pennsylvania School of Medicine; Dr. Edward Weiss, professor of clinical medicine, Temple University School of Medicine; and the Rev. Ernest Gordon, dean of The Chapel, Princeton (N. J.) University. All interested are welcome to attend.

Temple Establishes Psychiatric Institute.—Temple University Medical Center has announced plans to establish an institute of direct analysis to employ, for the first time on a large scale, a specialized approach to the treatment of schizophrenia. Dr. John N. Rosen, New York, who developed the direct analysis treatment method, based on a program of sustained psychotherapy in a controlled environment, and who was recently appointed associate professor of psychiatry at the medical center, will direct the training program. The Rockefeller Brothers Fund has pledged a total of $150,000 over a three-year period to establish the institute, under the direction of Dr. O. Spurgeon English, head of the department of psychiatry. The institute will consist of treatment units or dwellings decorated and arranged in the manner of private homes. Each unit will house about two patients and sufficient staff to offer round-the-clock treatment and companionship. Assistant therapists will live in the institute, and all members will eat at the "family" dining table. Each year the institute will offer a six-month training program to 30 psychiatrists and 30 talented nonmedical personnel as assistant therapists in the direct analysis technique. Patients will be accepted from the receiving station established by the mental health board at Philadelphia General Hospital, Temple University Medical Center, other institutions, and private sources. The program will begin, probably this fall, with the establishment of one unit. A second unit will be in operation six months later. Discharged patients will be followed for several months for treatment purposes and for at least 10 years for research purposes.

TEXAS

Assistant Director of Anderson Hospital.—Dr. David E. Liston has been appointed assistant director of the University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, to succeed Dr. Roy C. Heflebower, who retired but will remain at the hospital as consultant on grants and special projects. During World War II, Dr. Liston was deputy chief surgeon of the European theater of operations. He has received the Legion of Merit and the Bronze Star with an Oak Leaf Cluster.

WISCONSIN

Dr. Banyai Awarded Medal.—Dr. Andrew L. Banyai, associate clinical professor of medicine, Marquette University School of Medicine, Milwaukee, was recently awarded the Carlo Forlanini gold medal of the Italian Federation Against Tuberculosis for the introduction of artificial pneumoperitoneum in the treatment of pulmonary tuberculosis. The medal was presented at the Fourth International Congress on Diseases of the Chest in Cologne, Germany, Aug. 19-23.

Dr. Simenstad Honored.—Dr. Lien O. Simenstad, president, State Medical Society of Wisconsin, was recently honored at a testimonial dinner by the community of Osceola, in which he has practiced for 32 years and which he has served as mayor since 1948. Dr. Simenstad is a member of the Wisconsin State Aeronautics Commission and chief of staff of the Ladd Memorial Hospital. Principal speakers at the dinner were Dr. Valentine C. Kremser of Amery, representing the Polk County Medical Society; Dr. Rolland H. Wilson, Winona, president of the Minnesota State Medical Association; Dr. William H. Hengstler, St. Paul; Mr. C. H. Crownhart, Madison, secretary, State Medical Society of Wisconsin; and Mr. Robert Paulson, president, Osceola Civic and Commerce Association.

GENERAL

Hospital Directors of Medical Education.—The Association of Hospital Directors of Medical Education was formally organized April 28 at Atlantic City, N. J., "to nurture the growth and development of sound programs of medical education in community hospitals." Inquiries about membership will be welcomed and should be directed to Dr. Henry S. M. Uhl, Director of Medical Education, Worcester City Hospital, Worcester, Mass.

Fiske Essay on Infertility.—The Caleb Fiske prize of the Rhode Island Medical Society ($350) is offered for a dissertation on "The Present Day Treatment of Infertility." It must be typewritten, double spaced, and should not exceed 10,000 words. Essays must be submitted by Jan. 10, 1957. For information write the Secretary, Caleb Fiske Fund, Rhode Island Medical Society, 108 Francis St., Providence 3, R. I.

Meetings on Plastic Surgery.—The American Otorhinologic Society for Plastic Surgery announces (1) a seminar on reconstruction and plastic surgical procedures of the ear at the Morrison Hotel, Chicago, Oct. 14, and (2) a course in plastic surgery of the head and neck at the Louisiana State University, New Orleans, Feb. 17-22, 1957, to include cadaver, didactic, and wet and dry clinics. Early registration is recommended because of the limited facilities. Information may be obtained from the secretary, Dr. Louis J. Feit, 66 Park Ave., New York 16.

St. Vincent Prize.—The Medical Academy of Turin, Italy, announces a competition for the second St. Vincent Prize for medical sciences. The prize (10 million lire—about $16,000), offered for papers published since 1950, is available to candidates proposed by at least 10 ordinary members of the academy, by the winner of the first St. Vincent Prize, by medical faculties of Italian universities, or by presidents of the most important foreign medical academies and faculties, invited by the president of the Medical Academy of Turin. Information may be obtained from the General Secretary, Prof. Angelo Allodi.

Facts on Tuberculosis.—According to a release from the National Tuberculosis Association, one-third of the people in the United States are infected with live tubercle bacilli. Nevertheless, the death rate has been reduced 95% since 1900, so that there are 10 deaths per 100,000 population today. However, tuberculosis kills 45 persons a day. The tuberculosis association finds that nearly 400,000 Americans are suffering from active tuberculosis; that about 100,000 new cases are being reported annually; that 50-60 million people in this country are tuberculin reactors; and that tuberculosis costs the United States 600 million dollars a year, largely in tax dollars.

Brochure on Industrial Safety.—A new volume of "Five-Minute Safety Talks for Foremen," published by the National Safety Council, contains 52 talks designed to build sound attitudes on accident prevention. Especially useful to foremen and supervisors, the talks provide outline and text for informal safety talks or scheduled training sessions. The talks include material on general topics, such as attitudes, lifting, and first aid, as well as information on specific problems including the use of power-actuated hand tools, masonry chipping, caustic chemicals, explosive dusts, flammable liquids, drills, saws, and electricity. For information write the National Safety Council, 425 N. Michigan Ave., Chicago 11.

Congenital Amputee Conference.—The 12th semiannual Congenital Amputee Conference will be held Oct. 13, 10 a. m. at the Kessler Institute for Rehabilitation, West Orange, N. J. This free diagnostic service is available to congenital amputee children through medical referral. The morning program will include an educational and orientation session regarding congenital malformations and principles of rehabilitation of the congenital amputee as well as films and demonstrations. In the afternoon, clinical examination of the children will be held. Lunch may be purchased at the institute. The conference is open to doctors, nurses, limb makers, therapists, and other rehabilitation person-

nel without charge. Those who plan to attend should register in advance with Mrs. Lucile Gould, Kessler Institute for Rehabilitation, West Orange, N. J., Redwood 1-3600.

Vermont–New Hampshire Medical Meeting.—The combined annual meeting of the Vermont State Medical Society (Dr. W. Douglas Lindsay, Montpelier, president) and the New Hampshire Medical Society (Dr. Louis C. Theobald, Exeter, president) will be held at Wentworth-by-the-Sea, Portsmouth, N. H., Oct. 7-9. The general sessions speakers will include:

Jere W. Lord, New York, Surgical Aspects of the Abdominal Aorta and Iliac Arteries.
Joshua B. Burnett, Hanover, N. H., Difficult Cases of Gout.
John P. Merrill, Boston, Current Concepts of the Pathogenesis and Treatment of Hypertension.
Ralph Adams, Wolfboro, N. H., Subclinical Adrenal Insufficiency.

The banquet speaker on Monday night, Allen R. Foley, Dartmouth College, Hanover, N. H., will have as his subject "Vermont Humor."

Gastroenterology Meeting.—The third annual convention of the American College of Gastroenterology will be held at the Roosevelt Hotel, New York, Oct. 15-17, and will be followed by a course in postgraduate gastroenterology, Oct. 18-20. Attendance at the postgraduate course is limited to those who have paid the matriculation fee. Panel discussions to be presented during the scientific sessions will include:

Diseases of the Esophagus, Charles B. Ripstein, New York (moderator); Irwin M. Arias, Anthony L. Danza, Milton Elkin, and Alfred A. Angrist, New York, participants.
Diseases of the Stomach and Duodenum, Linn J. Boyd, New York (moderator); George B. Glass, Ralph Colp, Frank J. Borrelli, and Francis D. Speer, New York, participants.
Esophageal Varices—Portal Hypertension, Hirsch R. Liebowitz, New York (moderator); Carl H. Greene, Brooklyn, Louis M. Rousselot, and Francis F. Ruzicka Jr., New York, participants.
Diseases of the Colon, Perrin H. Long, Brooklyn (moderator); Sidney M. Fierst, Irving F. Enquist, Harry Z. Mellins, and Patrick J. Fitzgerald, Brooklyn, participants.
Diseases of the Small Intestine, Michael J. Lepore, New York (moderator); Thomas P. Almy, Milton R. Porter, Louis A. Rottenberg, and Raffaele Lattes, New York, participants.
Diseases of the Gallbladder and Pancreas, William A. Barnes, New York (moderator); Michael Lake, Mary A. Payne, William F. Nichel Jr., John A. Evans, and John M. Pearce, New York, participants.

A question-and-answer period will follow each panel discussion. The luncheon, 12:30 p. m. Monday, will be sponsored by Burton, Parsons & Company. The banquet will be at 7:30 p. m. Tuesday at the Palm Terrace Suite of the Roosevelt Hotel. Twelve scientific papers will be presented. A motion picture program Wednesday, 8:30 p. m., will be preceded by presentation of the winning paper in the 1956 Ames award contest. Scientific and technical exhibits will be on display.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

Alabama: *Examination.* Montgomery, June 18-20. Sec., Dr. D. G. Gill, State Office Bldg., Montgomery 4.

Arizona:* *Examination and Reciprocity.* Phoenix, Oct. 17-19. Ex. Sec., Mr. Robert Carpenter, 411 Security Bldg., Phoenix.

Arkansas:* *Examination and Reciprocity.* Little Rock, Nov. 8-9. Sec., Dr. Joe Verser, Harrisburg.

California: *Written Examination.* Sacramento, Oct. 15-18. *Oral Examination for Reciprocity Applicants.* Los Angeles, Nov. 17. Sec., Dr. Louis E. Jones, 1020 N Street, Sacramento.

Colorado:* *Reciprocity.* Denver, Oct. 9. Final date for filing application was Sept. 10. *Examination.* Denver, Dec. 4-5. Final date for filing application is Nov. 2. Sec., Dr. Samuel H. Brown, 831 Republic Bldg., Denver 2.

Connecticut:* *Examination.* Hartford, Nov. 13-15. Sec., Dr. Creighton Barker, 160 St. Ronan St., New Haven.

Delaware: *Examination.* Dover, Jan. 8-10. *Reciprocity.* Dover, Jan. 17. Sec., Dr. Joseph S. McDaniel, 225 So. State St., Dover.

District of Columbia:* *Examination.* Washington, Nov. 13-14. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington 6.

Florida:* *Examination.* Miami Beach, Nov. 25-27. Sec., Dr. Homer L. Pearson, 901 N.W. 17th St., Miami 36.

Georgia: *Examination and Reciprocity.* Atlanta, Oct. 9-11. Sec., Mr. Cecil L. Clifton, 111 State Capitol, Atlanta 3.

Idaho: *Examination and Reciprocity.* Boise, Jan. 7-9. Exec. Sec., Mr. Armand L. Bird, 304 Sonna Bldg., Boise.

Iowa:* *Examination.* Des Moines, Dec. 3-5. Ex. Sec., Mr. Ronald V. Saf, State Office Bldg., Des Moines.

Kansas: *Examination and Endorsement.* Topeka, Dec. 12-13. Sec., Dr. Lyle F. Schmaus, 872 New Brotherhood Bldg., Kansas City.

Kentucky: *Examination.* Louisville, Dec. 10-12. Sec., Dr. Russell Teague, 620 South Third St., Louisville 2.

Louisiana: *Examination and Reciprocity.* New Orleans, Dec. 6-8. Sec., Dr. Edwin H. Lawson, 930 Hibernia Bank Bldg., New Orleans 12.

Maine: *Examination and Reciprocity.* Portland, Nov. 13-14. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Examination.* Baltimore, Dec. 11-14. Sec., Dr. Lewis P. Gundry, 1211 Cathedral St., Baltimore 1.

Massachusetts: *Examination.* Boston, Jan. 15-18. Sec., Dr. Robert C. Cochrane, State Office Bldg., Boston.

Michigan:* *Examination.* Lansing, Oct. 10-12. Sec., Dr. E. C. Swanson, 118 Stevens T. Mason Bldg., West Michigan Ave., Lansing 8.

Minnesota:* *Examination and Reciprocity.* Minneapolis, Oct. 16-18. Sec., Dr. F. H. Magney, 230 Lowry Medical Arts Bldg., St. Paul 12.

Mississippi: *Reciprocity.* Jackson, December. *Examination.* Jackson, June. Asst. Sec., Dr. R. N. Whitfield, Old Capitol, Jackson.

Missouri: *Examination and Reciprocity.* Kansas City, Oct. 25-27. Ex. Sec., Mr. John A. Hailey, Box 4, State Capitol Bldg., Jefferson City.

Nebraska:* *Examination.* Omaha, June 17-19. Director, Mr. Husted K. Watson, Room 1009, State Capitol Bldg., Lincoln 9.

New Jersey: *Examination.* Trenton, Oct. 16-19. Sec., Dr. Patrick H. Corrigan, 28 West State St., Trenton.

New Mexico:* *Examination and Reciprocity.* Santa Fe, Nov. 19-20. Sec., Dr. R. C. Derbyshire, 227 East Palace Ave., Santa Fe.

New York: *Examination.* Albany, Buffalo, New York City and Syracuse, Oct. 16-19. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

North Dakota: *Examination and Reciprocity.* Grand Forks, Jan. 2-3. Sec., Dr. C. J. Glaspel, Grafton.

Oregon:* *Reciprocity.* Portland, Oct. 19-20. *Examination.* Portland, January. Ex. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland 4.

South Dakota:* *Examination.* Sioux Falls, Jan. 21-22. Ex. Sec., Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

Texas:* *Examination and Reciprocity.* Fort Worth, Dec. 6-8. Applications for reciprocity must be complete and on file at least thirty days prior to the December meeting, and applications for examination must be complete and on file at least ten days prior to the meeting date. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

Utah: *Reciprocity.* Salt Lake City, Nov. 20. *Examination.* Salt Lake City, July 11-13. Director, Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

Virginia: *Examination and Reciprocity.* Richmond, Dec. 3-7. Address: Secretary to the Board, 631 First St., S.W., Roanoke.

Washington:* *Examination and Reciprocity.* Seattle, Jan. 14-16 and Jan. 12. Sec., Mr. Edward C. Dohm, Olympia.

West Virginia: *Reciprocity.* Charleston, Oct. 8. *Examination.* Charleston, January. Sec., Dr. Newman H. Dyer, State Office Building No. 3, Charleston 5.

Wisconsin:* *Reciprocity.* Madison, Oct. 19 and Jan. 9. *Examination.* Madison, Jan. 8-10. Sec., Dr. Thomas W. Turney, Jr., 1140 State Office Bldg., 1 West Wilson St., Madison.

Alaska:* On application in Anchorage, Fairbanks, Juneau and other towns. Sec., Dr. W. M. Whitehead, 172 South Franklin St., Juneau.

Guam: *Subject to Call.* Act. Sec., Dr. S. F. Provencher, Agana.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Colorado: *Examination and Reciprocity.* Dec. 5-8, Lincoln and Denver. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver 18.

Connecticut: *Examination.* New Haven, Oct. 13. Exec. Asst., Miss Regina G. Brown, 238 Bradley St., New Haven 10.

District of Columbia: *Examination.* Washington, Oct. 22-23. Deputy Director, Mr. Paul Foley, 1740 Massachusetts Ave., N.W., Washington.

Iowa: *Examination.* Des Moines, Oct. 9. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

Michigan: *Examination and Reciprocity.* Ann Arbor and Detroit, Oct. 12-13. Sec., Mrs. Anne Baker, 116 Stevens T. Mason Bldg., Lansing.

New Mexico: *Examination.* Santa Fe, Oct. 21. Sec., Mrs. Marguerite Cantrell, Box 1322, Santa Fe.

Oregon: *Examination.* Portland, Dec. 1. Dr. Earl M. Palett, Sec., State Board of Higher Education, Eugene.

South Dakota: *Examination.* Vermillion, Dec. 7-8. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

Texas: *Examination.* Austin and Houston, Oct. 19-20. Sec., Bro. Raphael Wilson, 407 Perry-Brooks Bldg., Austin.

Washington: *Examination.* Seattle, Jan. 9-10. Sec., Mr. Edward C. Dohm, Olympia.

Wisconsin: *Examination.* Milwaukee, Dec. 1. Sec., Dr. W. H. Barber, 621 Ransom St., Ripon.

Alaska: *Examination and Reciprocity.* Anchorage and Juneau, first week of February, April, June, August and November. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

*Basic Science Certificate required.

DEATHS

Hartshorn, Winfred Morgan, New York City; born in Ellsworth Falls, Maine, April 27, 1874; Columbia University College of Physicians and Surgeons, New York City, 1902; an associate member of the American Medical Association; member of the American Academy of Pediatrics; specialist certified by the American Board of Pediatrics; formerly professor of pediatrics at the New York Polyclinic Medical School and Hospital and clinical professor of pediatrics at the University and Bellevue Hospital Medical College; served overseas during World War I; consulting physician in pediatrics at the New York Polyclinic Medical School and Hospital and the Hospital for Special Surgery; previously associated with the Roosevelt Hospital and the Flower and Fifth Avenue Hospitals; died in the New York Hospital July 1, aged 82, of abdominal aneurysm.

Mallory, William Johnston ✱ Lovettsville, Va.; born Aug. 23, 1874; Columbian University Medical Department, Washington, D. C., 1903; member and past-president of the Medical Society of the District of Columbia; past-president of the Washington Social Hygiene Society; professor emeritus of medicine at his alma mater, now known as the George Washington University School of Medicine; specialist certified by the American Board of Internal Medicine; member and formerly secretary of the American Gastro-Enterological Association; fellow of the American College of Physicians; veteran of World War I; named consultant for the Veterans Administration Facility Diagnostic Center in Mount Alto; died July 31, aged 81, of coronary thrombosis.

Creadick, A. Nowell ✱ Durham, N. C.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; clinical professor emeritus of obstetrics and gynecology at Yale University School of Medicine, New Haven, Conn.; specialist certified by the American Board of Obstetrics and Gynecology; member of the Connecticut State Medical Society; past-president of the Connecticut Cancer Society; retired chairman of the Commission on the Care and Treatment of the Chronically Ill, Aged and Infirm; served on the staff of the Grace-New Haven Community Hospital in New Haven, Conn.; died in Duke Hospital July 23, aged 72, of pneumonia, asthma, and pericarditis.

Henske, Joseph Aloysius, Omaha; Barnes Medical College, St. Louis, 1907; professor of pediatrics emeritus at University of Nebraska College of Medicine; specialist certified by the American Board of Pediatrics; charter member of the American Academy of Pediatrics; an associate member of the American Medical Association; served in France during World War I; at one time division surgeon for the Missouri Pacific Railroad; first staff president of the Children's Memorial Hospital; formerly on the staffs of the Bishop Clarkson Memorial Hospital and the Nebraska Methodist Hospital, where he died June 23, aged 69, of arteriosclerotic heart disease.

Benson, Reuel Allen, New York City; New York Homeopathic Medical College and Hospital, New York City, 1903; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics; an associate member of the American Medical Association; professor of graduate pediatrics at his alma mater, now known as the New York Medical College, Flower and Fifth Avenue Hospitals; member of the editorial board of the *Archives of Pediatrics;* on the staffs of the Metropolitan Hospital and the Flower and Fifth Avenue Hospitals, where he died Aug. 6, aged 78.

Highberger, Elmer, Jr. ✱ Greensburg, Pa.; Johns Hopkins University School of Medicine, Baltimore, 1930; specialist certified by the American Board of Internal Medicine; past-president of the Westmoreland County Medical Society; member of the American College of Chest Physicians, American Heart Association, and the American Trudeau Society; fellow of the American College of Physicians; served as medical director of the Grand View Sanatorium in Oil City; member and past-president of the staff of the Westmoreland Hospital, where he died July 21, aged 51, of cerebral hemorrhage and hypertension.

Allyn, Wilfred Earl ✱ Chardon, Ohio; Cleveland Homeopathic Medical College, Cleveland, 1903; senior staff member of the Huron Road Hospital in East Cleveland, where he died July 12, aged 79, of heart block.

Anfanger, Ludwig Anger ✱ New York City; Julius-Maximilians-Universität Medizinische Fakultät, Würzburg, Bavaria, Germany, 1927; specialist certified by the American Board of Internal Medicine; died July 27, aged 56.

Baum, Edward, Philadelphia; Baltimore Medical College, Baltimore, 1895; died July 2, aged 86.

Belden, George Gregory, Los Angeles; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; ship surgeon for the U. S. Steamship Lines for many years; died June 28, aged 82, of carcinoma of the intestine.

Bond, Roscoe R., Delaware, Ohio; Medical College of Ohio, Cincinnati, 1897; veteran of World War I; died July 17, aged 83.

Bonney, Charles Walter, Philadelphia; Jefferson Medical College of Philadelphia, 1904; served on the faculty of his alma mater; an associate member of the American Medical Association, member of the American Urological Association; fellow of the American College of Surgeons; on the staff of the Jefferson Medical College Hospital; died in the Pennsylvania Hospital July 21, aged 82, of pulmonary edema and fractured pelvis as the result of a fall.

Bowman, Foster Hunter ✱ Lieutenant Commander, U. S. Navy, retired, Bronxville, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1913; entered the U. S. Navy in 1915 and retired Dec. 5, 1921; past-president of the Yonkers Academy of Medicine; veteran of World Wars I and II; on the staff of the Yonkers (N. Y.) Professional Hospital; consulting surgeon at St. Joseph's Hospital in Yonkers; died July 16, aged 70.

Brisbine, John Clayton, Greensburg, Pa.; Cleveland Homeopathic Medical College, Cleveland, 1905; an associate member of the American Medical Association; on the staff of the Westmoreland Hospital, where he died July 4, aged 73, of cerebral accident due to arteriosclerosis.

Burkholder, Charles Augustus ✱ Chicago; Rush Medical College, Chicago, 1912; veteran of World War I; on the staff of the Grant Hospital; died July 27, aged 70, of coronary occlusion.

Clark, Dale Edward ✱ Sedan, Kan.; University of Kansas School of Medicine, Kansas City, 1951; interned at St. Mary's Hospital in Kansas City, Mo.; president of the Chautauqua County Medical Society; veteran of World War II; county health officer; staff member of the Sedan City Hospital in Sedan and the Hays Hospital in Cedar Vale, where he died June 4, aged 36, of nephritis.

Cottrell, Miriam Louise Johnson, Nampa, Idaho; Woman's Medical College of Pennsylvania, Philadelphia, 1944; resident at the Salt Lake County General Hospital in Salt Lake City; died July 7, aged 38.

Crabtree, Loren Hunter ✱ Elizabeth, N. J.; Temple University School of Medicine, Philadelphia, 1932; veteran of World War I; on the staff of the Rahway (N. J.) Hospital, the St. Elizabeth Hospital, and the Elizabeth General Hospital and Dispensary, where he died June 21, aged 61, of cerebral thrombosis and arteriosclerosis.

Curry, Elmer Astley, Eaton, Ohio; Miami Medical College, Cincinnati, 1903; died in the Miami Valley Hospital, Dayton, June 3, aged 93, of complications following a fracture of the hip.

✱ Indicates Member of the American Medical Association.

Darling, Charles Gilchrist, Evanston, Ill.; National Medical University, Chicago, 1899; Northwestern University Medical School, Chicago, 1903; clinical professor of ophthalmology emeritus (Rush), University of Illinois College of Medicine; specialist certified by the American Board of Ophthalmology; past-president and secretary of the Chicago Ophthalmological Society; served on the staffs of the Cook County and Presbyterian hospitals in Chicago; died Aug. 8, aged 78.

Doyle, William Joseph, Bear Creek, Pa.; Jefferson Medical College of Philadelphia, 1912; past-president of the Luzerne County Medical Society; an associate member of the American Medical Association; fellow of the American College of Surgeons; served overseas during World War I; on the staff of the Mercy Hospital, Wilkes-Barre, where he died June 28, aged 70.

Epstein, Harry Jay ● Philadelphia; Temple University School of Medicine, Philadelphia, 1931; on the faculty of the Hahnemann Medical College and Hospital; specialist certified by the American Board of Internal Medicine; on the staff of the Albert Einstein Medical Center–Southern Division, where he died July 9, aged 54, of coronary heart disease.

Eshoo, Samuel O., Turlock, Calif.; Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1902; died June 4, aged 80, of heart disease.

Fisher, Harold Lionel, Brawley, Calif.; University of Oregon Medical School, Portland, 1942; served during World War II; interned at San Diego County General Hospital in San Diego; formerly a resident in pathology at the Veterans Administration Center in Los Angeles; died in the Veterans Administration Hospital in San Fernando June 27, aged 43, of cor pulmonale and tuberculosis.

Fitzgerald, Edmond William ● Port Huron, Mich.; St. Louis University School of Medicine, St. Louis, 1925; veteran of World War II; on the staff of the Port Huron Hospital; died July 8, aged 55, of heart disease.

Fix, Carroll Clinton, Bedford, Ky.; Hospital College of Medicine, Louisville, 1906; formerly practiced in Louisville, where he was on the staffs of the Jewish Hospital and the SS. Mary and Elizabeth Hospital; died in the Kentucky Baptist Hospital in Louisville June 7, aged 73, of a popliteal aneurysm and coronary occlusion.

Fox, Ann Margaret, Los Angeles; New York Medical College, Flower and Fifth Avenue Hospitals, New York City, 1943; certified by the National Board of Medical Examiners; an associate member of the American Medical Association; interned at the New York University Post-Graduate Medical School and Hospital in New York City, where she served a residency; formerly a resident in pediatrics and contagious diseases at the Children's Hospital in San Francisco; died July 22, aged 40.

Gannon, Francis James ● Cleveland; St. Louis University School of Medicine, St. Louis, 1935; member of the Cleveland Academy of Medicine; on the staffs of St. John's, St. Alexis, and Marymount hospitals; died July 9, aged 47, of carcinoma of the right lung.

Garlock, Arthur Varney ● Bemidji, Minn.; Northwestern University Medical School, Chicago, 1910; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; served as mayor of Bemidji; on the staff of the Lutheran Hospital; for five years president of the Bemidji Park Board; died June 25, aged 71.

Gardner, Jesse Walter ● Jerseytown, Pa.; Jefferson Medical College of Philadelphia, 1909; on the courtesy staff of the Bloomsburg (Pa.) Hospital; died July 3, aged 72, of carcinoma of the lung.

Gesztonyi, William ● Pittsburgh; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1914; during World War II held a rank in the Hungarian Army; on the staffs of the St. Margaret Memorial Hospital, where he served an internship, and the Montefiore Hospital, where he died June 28, aged 69, of acute myocardial infarction and cerebral hemorrhage.

Gray, Edmund Coleman, Rochester, N. Y.; Bennett Medical College, Chicago, 1914; associated with the MacFadden Center in Dansville; died July 6, aged 72, of cancer.

Haagen, Louis C., St. Louis; Barnes Medical College, St. Louis, 1899; retired pharmacist; died in St. Luke's Hospital June 17, aged 91, of arteriosclerosis.

Hales, Jesse Collins ● Gardner, Mass.; Tufts College Medical School, Boston, 1924; interned at the Cambridge (Mass.) City Hospital; past-president of the Worcester North District Medical Society; for many years school physician; served during World Wars I and II; on the staff of the Henry Heywood Memorial Hospital; died in the Veterans Administration Hospital, Brockton, June 17, aged 58, of cardiovascular-renal disease and tuberculosis.

Halverson, Henry Ludwig, Minot, N. D.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, Chicago, 1904; past-president of the North Dakota Health Officers Association; served as county health officer; died June 6, aged 76.

Hammack, John A., Kennedale, Texas (licensed in Texas under the Act of 1907); died July 3, aged 92, of cerebral vascular accident.

Hartigan, Francis Xavier ● St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1910; in 1939 president of the Buchanan County Medical Society; formerly vice-president of the St. Joseph Clinical Society; fellow of the American College of Surgeons; president of the St. Joseph Health Board from 1938 to 1946; served in France during World War I; on the staffs of the Missouri Methodist Hospital, State Hospital no. 2, and St. Joseph's Hospital, where he died June 9, aged 67, of acute necrotizing tracheobronchitis.

Hawthorne, Grace Maude, Nevada, Iowa; University of Illinois College of Medicine, Chicago, 1916; died June 17, aged 75.

Hayes, Julius Poe ● Clanton, Ala.; Memphis (Tenn.) Hospital Medical College, 1896; died June 30, aged 86, of arteriosclerosis.

Herbert, Alpha Nathan, Miami, Fla.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1925; city physician; died in Ellicott City, Md., June 22, aged 55, of abdominal aneurysm.

Heyer, Harold Hankinson ● New London, Conn.; University of the City of New York Medical Department, New York City, 1887; for many years member of the school board; died June 13, aged 92, of arteriosclerotic cardiovascular disease.

Hickman, Clarence Clyde, Lincoln, Neb.; Rush Medical College, Chicago, 1910; veteran of World War I; served on the staff of the Lincoln General Hospital; died June 13, aged 72.

Hill, Charles Byron, Guthrie, Okla.; University Medical College of Kansas City, Mo., 1899; an associate member of the American Medical Association; veteran of Spanish American War; served as a member of the school board; died June 26, aged 84, of cerebral hemorrhage.

Hills, Louis Lenville ● Westbrook, Maine; Medical School of Maine, Portland, 1903; died June 9, aged 79, of arteriosclerosis.

Hoffman, Charles Earle, San Mateo, Calif.; John A. Creighton Medical College, Omaha, 1914; died July 10, aged 67, of uremia and heart disease.

Hoffses, Granville Ernest ● Manchester, N. H.; Boston University School of Medicine, Boston, 1898; veteran of World War I; served on the staff of the Elliot Hospital; at one time practiced in Dedham, Mass., where he was on the school committee; died June 27, aged 83.

Hogeboom, George Hall, Bethesda, Md.; Johns Hopkins University School of Medicine, Baltimore, 1939; conducted fundamental research in cell chemistry at the National Institutes of Health, where he was chief of the cellular biology section of the National Cancer Institute; for many years associated with the Rockefeller Institute for Research in New York City; died in the Central Dispensary and Emergency Hospital, Washington, D. C., July 5, aged 43.

Hubbard, Clinton De Witt, Manhattan Beach, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1891; an associate member of the American Medical Association; formerly practiced in Huntington Park, where he was city councilman; died June 28, aged 90, of carcinoma of the lower end of esophagus.

Humphrey, David W., Los Angeles; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1905; died in the Glendale (Calif.) Sanitarium and Hospital June 21, aged 78, of coronary thrombosis.

Hustead, Edwin L. ● Los Angeles; John A. Creighton Medical College, Omaha, 1912; on the staffs of the Santa Monica and St. John's hospitals in Santa Monica; died June 11, aged 70.

Inman, Bruce B., Keota, Okla.; University of Arkansas School of Medicine, Little Rock, 1913; died June 12, aged 71, of coronary occlusion.

Keim, Albert L., Pittsburgh; Baltimore Medical College, Baltimore, 1913; died July 28, aged 71.

Latimer, Thomas Edwin, Hyattsville, Md.; University of Maryland School of Medicine, Baltimore, 1907; served on the staff of the Sibley Memorial Hospital, Washington, D. C.; died in the Prince George's General Hospital in Cheverly, July 20, aged 82, of carcinoma of the stomach.

Lease, Henry Joseph ● North Bergen, N. J.; Columbia University College of Physicians and Surgeons, New York City, 1926; served as assistant police surgeon; on the staff of the North Hudson Hospital in Weehawken; died in the Christ Hospital, Jersey City, June 29, aged 56, of cirrhosis of the liver.

Loomis, DeWitt, Boonville, Ind.; Chicago College of Medicine and Surgery, 1912; served overseas in France during World War I; died June 24, aged 70, of cerebral hemorrhage.

MacDonald, William Campbell ● Malden, Mass.; Colorado School of Medicine, Boulder, 1895; served on the staff of the Malden Hospital, where he was chairman emeritus of the medical board; died in the Melrose (Mass.) Hospital June 24, aged 90, of jaundice.

Mackey, John Frederick ● La Jolla, Calif.; University Medical College of Kansas City, Mo., 1904; member of the Colorado State Medical Society; veteran of World War I; formerly practiced in Denver, where he was on the staffs of the Porter Sanitarium and Hospital and the General Rose Memorial Hospital; died June 19, aged 80, of myocardial infarction.

Mantle, William B. ● Albion, Iowa; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1902; died May 17, aged 83, of chronic myocarditis.

Marchant, J. Henry, Baltimore; University of Maryland School of Medicine, Baltimore, 1891; also a dentist; died July 2, aged 86.

Marczak, Clement Stanislaw, Lockport, Ill.; Chicago Medical School, 1930; died in Chicago May 29, aged 67.

Marra, Rocco Salvatore ● Orange, N. J.; George Washington University School of Medicine, Washington, D. C., 1925; served as examining physician for the New Jersey National Guard; chief anesthetist at the Doctors Hospital and on the staffs of St. Michael's and Columbus hospitals in Newark, and St. Mary's Hospital; died July 4, aged 57, of Paget's disease and sarcoma.

Marshall, William Hill, Milwaukee; Meharry Medical College, Nashville, Tenn., 1903; died in the Milwaukee County Hospital June 12, aged 80, of bronchopneumonia and arteriosclerosis.

Mathews, Paul Girard ● Walsenburg, Colo.; University of Colorado School of Medicine, Denver, 1908; past-president of the Huerfano County Medical Society; died in Colorado Springs June 21, aged 70, of pneumonia and lung cancer.

McClellan, Frederick Coe ● Canandaigua, N. Y.; University of Buffalo School of Medicine, Buffalo, 1917; fellow of the American College of Surgeons; health officer; veteran of World War I; on the staff of the Frederick Ferris Thompson Hospital; died in the Genesee Hospital, Rochester, July 4, aged 62, of acute myocardial infarction.

McGary, Joseph Richard, Evansville, Ind.; Kentucky School of Medicine, Louisville, 1902; veteran of World War I; member of the staff of the Owensboro-Daviess County Hospital in Owensboro, Ky.; died June 23, aged 79, of arteriosclerosis.

McKinstray, Homer R. ● Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; taught orthopedics at the Indiana University School of Medicine; served on the staffs of the Methodist and Indianapolis General hospitals; died June 21, aged 76, of arteriosclerosis.

Meadows, Matthew Warnack ● Fullerton, Ky.; Eclectic Medical Institute, Cincinnati, 1904; died June 4, aged 87.

Myers, Robert Douglas ● Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1926; member of the American Society of Anesthesiologists; veteran of World War II; an anesthetist at Mount Carmel Hospital; died June 19, aged 55, of coronary occlusion.

Neher, Charles Kendal ● Cleveland; University of Chicago, the School of Medicine, 1934; interned at Miami Valley Hospital in Dayton, Ohio; formerly a resident at the Barnes Hospital in St. Louis; on the staffs of the Grace and Fairview Park hospitals; died in Sandusky, Ohio, June 24, aged 51, in a plane crash.

Neill, William, Jr., Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1912; an associate member of the American Medical Association; fellow of the American College of Surgeons; served in the British and American armies during World War I; instructor in surgery at his alma mater; on the staffs of the Church Home and Hospital, Hospital for Women, Union Memorial Hospital, Maryland General Hospital, and St. Joseph's Hospital; consultant, Cambridge-Maryland Hospital in Cambridge; died in the Johns Hopkins Hospital June 24, aged 68, of cerebrovascular accident.

Nunn, Joshua Hugh ● Dyersburg, Tenn.; University of Tennessee College of Medicine, Memphis, 1929; veteran of World War II; died in the Baptist Memorial Hospital in Memphis June 28, aged 51.

Nye, Luther A., Okemah, Okla.; University of Tennessee Medical Department, Nashville, 1896; past-president of the Okfuskee County Medical Society; served on the city council; died June 19, aged 81.

Palmer, King Paige, Holdrege, Neb.; Eclectic Medical College, Cincinnati, 1918; died in the Hastings State Hospital in Ingleside May 28, aged 64, of bronchopneumonia.

Park, George, Blacksville, W. Va.; Jefferson Medical College of Philadelphia, 1928; died July 7, aged 55.

Parker, William Henry ● Richmond, Va.; University College of Medicine, Richmond, 1895; named Virginia commissioner for the Amateur Athletic Union in 1923; served as president of the Richmond Baseball team, and one of Richmond's athletic fields was named in his honor; a member and chairman of the city electoral board and had been medical director of the Mutual Life Insurance Company of Virginia since 1925; died June 13, aged 82, of parkinsonian disease.

Portz, Wade Russell ● Hartville, Ohio; Ohio State University College of Medicine, Columbus, 1929; member of the American Academy of General Practice; accidentally drowned when he fell out of his boat while fishing June 23, aged 53.

FOREIGN LETTERS

INDIA

Health Insurance Scheme in Delhi.—The rapid increase in the attendance of patients at the dispensaries run under the contributary health service scheme bears testimony to the growing popularity and usefulness of this pilot experiment, according to the report on the scheme published by the Union Health Ministry. The report reveals that, while the daily average attendance at the dispensaries in Delhi and New Delhi in the first month of its operation (July, 1954) was 3,936, it rose to 8,292 in the last week of July, 1955. The number of beneficiaries, including government servants and their families and dependents, also increased from 223,000 to 273,844 in the same period. A significant feature of the scheme is that it has done away with the distinction between classes of government servants in the matter of free medical attendance and treatment. A compulsory monthly contribution on a graded scale is levied on all government employees registered under the scheme.

Treatment of Drug-Resistant Pulmonary Tuberculosis.—Takaro and Dey (*Indian Journal of Tuberculosis*, June, 1956) report that cyanacetic acid hydrazide resembles isoniazid except for substitution of the pyridine ring in the isoniazid for an aliphatic ring. It was thought that this alteration would reduce the toxicity while maintaining the antimicrobial activity. Seventeen patients who had far-advanced bilateral pulmonary tuberculosis with cavities in the lungs and sputum positive for acid-fast bacilli, in spite of previous specific antitubercular treatment, were selected for trial. The criteria by which the value of the drug was assessed were (1) changes in body weight, (2) acid-fast bacilli in the sputum, (3) number and size of cavities and clearing noncavitary infiltration, and (4) present status of disease (whether active, arrested, or inactive). The average duration of disease before start of treatment was 40 months. The age of the patients varied from 16 to 64. All had had pneumoperitoneum and some had had artificial pneumothorax or thoracoplasty. Three had had a course of viomycin combined with oxytetracycline and several had thiosemicarbazone, in addition to streptomycin, aminosalicylic acid, and isoniazid. The average dose of the new drug was 7.5 mg. per kilogram of body weight continued for an average period of six months. The authors concluded that there was no clear-cut evidence that the drug is effective in these patients. Paresthesia, with tingling, soreness, and burning of legs and feet, was the most common toxic symptom.

Training Center in Ayur-Veda.—The Union Health Minister, at the opening of the postgraduate training center in Jamnagar in July, said that this institution was a logical sequel to the establishment of the Central Institute of Research in Indigenous Systems of Medicine three years ago. In selecting Jamnagar for the location of this institute, the government was principally guided by the facilities already available there, including abundant accommodation, the presence of an excellent library relating to both indigenous and modern systems of medicine, a herbarium, a department of pharmacy, and the possibility of active collaboration with a modern medical college. A postgraduate training institution should work in close association with the center for the promotion of active research if the quality of teaching is to be sufficiently high. Moreover, the bringing together of a body of highly specialized exponents of Ayur-Veda and their active collaboration with those trained in modern medicine toward the formulation of an active research program is in itself an innovation. Research in Ayur-Veda should be carried out on two separate lines. The first is the study of the fundamental principles and practices of Ayur-Veda, and the second is investigation into the vast body of drugs that this system possesses. Fundamental research in Ayur-Veda is already in progress at the Jamnagar Research Institute. Here the diagnosis and treatment of a patient are carried out on strictly ayurvedic lines while a team of practitioners of modern medicine record the pathological and clinical tests necessary for the evaluation of results. The data thus collected will provide the basis for attempting a proper interpretation of the fundamental concepts of the ayurvedic system. Plans for the next five years provide for a wide expansion of drug research. Ayur-Veda has its own pharmacopeia based on a wide variety of herbal remedies. In the past 30 years many studies have been carried out to assess the pharmacological properties of the more widely used ayurvedic drugs.

Artificial Hibernation.—P. K. Sen and co-workers (*Indian J. Surg.* 18:114, 1956) stated that the chilled heart is especially likely to go into ventricular fibrillation and other arrhythmias. Hypoxia, carbon dioxide retention, and changes in the serum potassium level have been incriminated in turn. Observations by the authors indicate that hypoxia could not be a major factor. It has been shown by other workers that hyperventilation prevents ventricular fibrillation, while an excess of carbon dioxide in the blood makes the heart susceptible to this form of arrythmia. Lowering of the serum potassium level was observed in the chilled hyperventilated dogs. The authors used a standard method of production of ventricular fibrillation in hypothermia based on the delivering of a standard hormonal insult to a chilled heart at a definite temperature and in a standard state of anoxia. Healthy dogs were given 3 ml. of a 1:20,000 solution of epinephrine and the temperature, electrocardiogram, and the levels of serum proteins, sugar, carbon dioxide, sodium, and potassium were checked. The most significant change in these animals was observed in the potassium level, which consistently dropped. Hypersensitivity of the myocardium at low temperatures is in some way concerned with a rise in carbon dioxide and a fall in serum potassium levels. According to the authors, injecting epinephrine into a chilled anoxic heart provides a standard method of producing ventricular fibrillation. The best remedy for this condition proved to be rapid manual compression of the heart accompanied by maintenance of full oxygenation. Intracardiac injection of potassium is ineffective, and the use of electric shock was also disappointing.

Vascular Occlusions.—Ramamurthi in *Neurology* (April-June, 1956) stated that vascular occlusions in the posterior cranial fossa are not uncommon, although they are rare when compared to cerebral vascular lesions elsewhere. The neurological findings are not constant even if the same blood vessel is involved, due to variations in collateral circulation and the frequent occurrence of anomalies in the arterial supply of the hindbrain. The author reports 22 cases encountered in five years, as compared to 650 cerebral vascular accidents met with in the same period. The vessels involved were the posterior inferior cerebellar artery or its branches, the vertebral artery, the basilar artery, the anterior inferior cerebellar artery, the anterior spinal artery, and arteries supplying the midbrain, in that order. The predilection for involvement of the posterior inferior cerebellar artery, may be due to its large size or its long and tortuous course. The vascular occlusions may be caused by trauma, such infections as syphilis and tuberculosis, thromboangiitis, arteriosclerosis, or hypertension. The commonest cause is hypertension. The prognosis has been uniformly good. The almost complete recovery occurring in many patients is in contrast to the results of complete thrombosis. Spasm of the vessel is a plausible explanation, especially in patients with arteriosclerosis and hypertension. In younger patients such syndromes have occurred without any definite cause. In one young girl it followed an attack of coryza. Aneurysms of the vessels with leak or partial thrombosis may be responsible.

PERU

Tuberculosis.—In *Revista peruana de salud pública* (vol. 4, no. 7, 1955) Dr. Brouncle Carrión, in a survey of the death rates from tuberculosis in the principal Peruvian cities, classifies the cities with available records into three groups: those with increasing, those with stationary, and those with decreasing rates

The items in these letters are contributed by regular correspondents in the various foreign countries.

of tuberculosis infection. He concluded that, epidemiologically, tuberculosis presents different characteristics from one city to another and that a massive infection of the population is likely to occur in the coming years unless appropriate measures are adopted promptly. The cities in the Andean region showed increasing death rates and trend curves similar to those observed in the cities near or on the coast 25 years ago that now show decreasing death rates and trend curves. The death rate of Arequipa, however, one of the highest in the country, showed a slow, steady decrease throughout the last 20 years. Another high-altitude city with an even greater drop in the death rate was Jauja. This can be explained by the fact that this city, although up to few years ago a traditional hotbed of tuberculosis, possessed the first tuberculosis sanatorium because of its excellent climate. On the other hand, Moyomamba and Iquitos, two large cities in the jungle, show an ascending death rate, unlike that of other cities of the same region.

SWITZERLAND

Cortisone and Prednisone.—At the Congress of Swiss Internists, Dr. Fabre said that, in treating patients with edema in whom resistance to usual treatments cannot be explained, and especially when a hyponatremia exists, he gives 40 mg. of prednisone daily. Sometimes the diuretic influence of prednisone is not felt, but the hormone reactivates diuretics that have lost their effect. Adrenal hormones should never be given to patients with edema if it is not possible to obtain a rigidly salt-poor diet. Even with prednisone, of which the action on salt is much more moderate than that of cortisone, the possibility of sodium retention cannot be excluded. The mode of action of these hormones is not yet understood, but it is probably different in different persons. Whatever the mode, the following properties of cortisone and prednisone are beneficial: 1. They stimulate aqueous diuresis by hemodilution; here cortisone acts as an antagonist of the antidiuretic posthypophyseal hormone. 2. They increase the glomerular filtrate, thus assisting spontaneous diuresis and the response to the diuretics acting on the tubules. 3. They limit the permeability of the membranes to the protein causing a reduction of the albuminuria evident in patients with nephrosis and of the protein transudation through capillary membranes. 4. They seem in certain patients to inhibit the secretion of the aldosterone, which is responsible for the tubular resorption of sodium.

Hypersplenism.—At the same meeting Gelin of Oran said that, if a patient's chief complaint is his abdominal enlargement, a hemogram should be obtained. This will indicate whether the splenomegaly is associated with a disturbance of the blood-forming organs. If the chief symptoms suggest a cytopenia, careful clinical examination will allow appraisal of the degree of responsibility of the spleen for this condition. Medical treatment consisting of blood transfusions, cortisone, and antibiotics should be tried for 10 days. If there is no improvement, the patient should be sent to a surgeon.

Carbutamide.—At the same meeting Bonhote and Constam of Zurich said that the blood sugar is maintained at a constant level through the hyperglycemic action of glucagon, epinephrine, the glucocorticoids, and somatotropin and the hypoglycemic action of insulin. The results show that the hypoglycemic action of such compounds as carbutamide is not exercised by inhibiting the adrenal cortex or the anterior lobe of the pituitary. Results also show that these compounds do not act on exogenous glucagon, nor do they inhibit the formation of glucose in the liver. The hypoglycemic effect of carbutamide appears to be due to an enzymatic inhibitory action on insulinase. Hofstetter and Ramel of Lausanne treated 84 diabetics with carbutamide for two to five months; 71 patients reacted favorably, but the conditions of 13 were resistant to this treatment. It was found that the percentage of successes increases with the age of the patients and the thin diabetic reacts less well to the drug than does the fat diabetic. Ten patients showed cutaneous allergic reactions. The change from insulin to carbutamide is possible on an ambulatory basis, provided the patient is frequently observed and the insulin doses are decreased gradually.

Symposium on the Spleen.—At a meeting of the Swiss Academy of Medical Sciences, K. Bernhard of Basel said that in a patient with lipid histiocytosis he observed a definite increase in the total lipids owing to an increase in cholesterol, while the neutral fats and the fatty acids remained unchanged. Experiments on spleens nourished with fatty acids not present in the daily diet showed by the recovery of these fatty acids in the spleen that this organ actively participates in the metabolism of nutritive fats. A. Vannotti of Lausanne, using radioactive iron (Fe^{59}), showed that altitude, anemia, hyperthyroidism, and acute infections diminish deposits of iron in the liver at the expense of the marrow, without notably modifying the rate of Fe^{59} circulating in the blood except in the course of acute infections; when it is moderately decreased. The concentration of iron in the spleen remains constant. Six or seven days after an intravenous injection of Fe^{59}, all of the Fe^{59} may be recovered from the erythrocytes, while its concentration, which was relatively high during the first five days, decreases progressively in the marrow, liver, and spleen. During the course of hemolytic anemias, after three days all the Fe^{59} may be recovered from the erythrocytes and in the following days the concentration of Fe^{59} in the spleen progressively increases, which is not normally the case. The author believes that, with intravenous use of Fe^{59}, the indications for splenectomy can be specified and, especially in patients with osteosclerosis myelofibrosis (when the marrow takes up practically no Fe^{59}), removal of a spleen that has just taken over the deficient hematopoietic function of the marrow should be avoided.

Hydrocortisone and Prednisone in Pulmonary Tuberculosis.—Favez and Aguet (*Schweiz. med. Wchnschr.* 86:843, 1956) have reported a study of 21 patients with recent pulmonary tuberculosis who were treated from the beginning with hydrocortisone and antibiotics. In each patient the radiological findings improved greatly during this treatment. Seven patients received hydrocortisone only after having been given antibiotics for 10 days to three months. In six of these the lesions became worse up till the time when treatment with cortisone was undertaken; then the pathological roentgenographic findings showed marked clearing. In two of eight patients who were treated from the beginning with hydrocortisone and antibiotics, improvement was moderate during the course of hormonal treatment, while in seven others there was no roentgenographic clearing. Four of these received cortisone only after having been treated with antibiotics for one or two months. The administration of cortisone in the patients suffering from progressive pulmonary tuberculosis where foci with a pneumonic aspect predominated brought almost total resorption of the pathological opacities in four to six weeks. After this, further improvement, including the closure of cavities, is brought about gradually with antibiotics.

Thyroid Function in Obstructive Jaundice.—B. R. Scazziga and co-workers (*Schweiz. med. Wchnschr.* 86:875, 1956) studied thyroid function in patients with jaundice. Those with obstructive jaundice showed an elevation of the protein-bound iodine level over and above that which might be expected in patients with parenchymatous jaundice. The authors believe that two different protein-bound iodine compounds are involved. They found the thyroid function to be normal in patients with obstructive jaundice. On the other hand, in patients with parenchymatous jaundice, hypofunction of the thyroid due to pituitary inhibition was observed. The difference between the behavior of thyroid function in obstructive and in parenchymatous jaundice suggests that the glucuronic acid conjugates, products of detoxication of thyroid hormone, would be stripped of all inhibitory action on the pituitary thyrotropic function.

Genetic Effects of Radiation.—An expert committee of the World Health Organization met in Copenhagen, Denmark, to discuss gaps in present knowledge of genetic effects of radiation and to advise WHO how it can most usefully assist in advancing and coordinating research on this subject. Although many investigations have been made on the genetic damage caused by radiation in the fruit fly and the mouse, it is not clear how the information obtained should be interpreted in terms of human heredity. Important information might be obtained by following up the offspring of parents who have received x-ray treatment of the pelvic region for nonmalignant diseases and

comparisons might be made between the incidence of inherited sickness among populations in regions where there is a natural high level of background radiation and that occurring in areas of low background radiation.

UNITED KINGDOM

Lipids and Blood Coagulation.—O'Brien (*Lancet* 2:232, 1956) investigated the effect of ingestion of butter, margarine, vegetable fat, and eggs on clotting time, using Russell's viper venom as the clotting agent. The ingestion of 50 gm. of any one of these fats shortens clotting time, determined by the standard Stypven viper venom method, by about 23 seconds. Two eggs, which contain only 10 gm. of fat, produce an even greater shortening of clotting time. The effect in this case was attributed to the presence of phospholipid, particularly phosphatidyl ethanolamine, 0.18 mcg. per milliliter of which is sufficient to shorten the clotting time of blood in vitro. O'Brien has also shown that the active material in platelets influencing blood coagulation is phosphatidyl ethanolamine. It would thus seem that the phospholipid content of a fatty meal is as important as the absolute quantity of fat in influencing clotting time.

The work of O'Brien was confirmed by other observers. Barkhan and co-workers fractionated two phospholipids from human brain tissue (*Lancet* 2:234, 1956). One, an accelerator in blood coagulation systems, is phosphatidyl ethanolamine. The other, an inhibitor, is probably phosphatidyl serine. Maclagan and Billimoria studied the effect of a number of common fatty foods on blood coagulation (*Lancet* 2:235, 1956). The minimum amount of food required to produce the maximum shortening of clotting time when added to 0.2 ml. of normal plasma was determined. Strongly positive results were almost confined to milk products, which in order of potency were butter, cheese, cream, and milk. Further investigations showed that the coagulant activity of these foods was due not to the fatty acids present but to the phospholipid content, probably phosphatidyl ethanolamine galactoside. These investigations, if confirmed, suggest that eggs, milk, and lipid-rich foods should be withdrawn from the diet of patients with a history of thrombosis or atherosclerosis.

Infections in Hospitals.—Two cases of infection in hospitals, one attributed to parsimony in the National Health Service and the other to a shortage of nurses, have been reported. The first case concerned a Plymouth hospital patient whose leg was amputated and who died of infection of the wound by Clostridium organisms. At the inquest the surgeon attributed the infection to contamination of the air of the operating room, in which clostridia had been found two years earlier. Ever since 1948 the surgical staff had been requesting improvements in the operating rooms, but plans had been repeatedly rejected on the grounds of economy within the National Health Service. The other case concerned an infant who died of micrococcic (staphylococcic) toxemia after the insertion of a catheter into the umbilical vein for an exchange transfusion. All aseptic precautions were taken, and, although a consultant pathologist was not prepared to say whether the infection of the umbilicus was primary or secondary, the coroner attributed death to infection of the operative wound. The area pathologist said that three months earlier 7 of the 11 members of the premature baby unit and 60% of the obstetric ward staff were found to be carriers of pyogenic organisms. Masks and gowns could not eliminate the danger. Highly trained nurses were difficult to obtain and keep, and they could not be replaced just because they were carriers. The pathologists thought that it was better to run the risk of infection than dispense with nurses skilled in the handling of premature and newborn babies.

College of Obstetricians and Gynecologists Libeled.—A libel action was brought by the Royal College of Obstetricians and Gynecologists against a newspaper. The plaintiffs claimed that an article entitled "Must Our Babies Be Born in Pain?" published in the *Daily Sketch* stated that the college had acted shamefully toward a certain obstetrician who had introduced a relaxation technique into obstetrics. This obstetrician aimed at producing a relatively painless childbirth without fear by giving the mother certain exercises during pregnancy and teaching her to relax during delivery. The article stated that the college had caused him to be harried and black-listed by the medical profession. The counsel for the plaintiffs said that this was a grave attack on the honor and propriety of the college and that it was entirely false and without foundation. The defendants apologized, published a note in the *Daily Sketch* expressing their regret at publication of the article, and agreed to pay substantial damages as well as costs of the proceedings.

Use of Fluoroscopes in Shoe Fitting.—Dr. E. D. Dyson, of the United Kingdom Atomic Energy Authority, has investigated the radiation hazards involved in the use of fluoroscopes in shoe fitting (*Brit. M. J.* 2:269, 1956). While it is impossible to calculate the exposure to radiation experienced by any one customer, rough calculations can be made on the basis of the time taken looking through the machine, the number of shoes bought annually, and, in the case of shop assistants, from the number of customers served in a year. The latest machines are fitted with a hand-set timer limiting exposure to 10 seconds. Exposure to radiation is most dangerous in children because they have new shoes frequently and because radiation may check bone growth. Dyson calculates that the dose rates around a typical machine are 4 mr per hour against the viewing hood, 4 to 30 mr per hour for the nearest shop assistant, and about 4 mr for customers near the machine. On the basis that each exposure lasts 10 seconds, that the average customer uses a pedoscope once a year, and that shop assistants sell 30 pairs of shoes a day, the average exposure of the individual can be worked out. Dyson estimates that it is only 1/1,000 of the natural background irradiation dosage. From the point of view of danger to the gonads it is negligible. Nevertheless, he thinks that control measures should be adopted. Machines should all be built to specification with efficient screening; viewing should be done by an assistant whose eyes are adapted to the dark to reduce the intensity of the fluorescence; screening of customer and assistant should be prescribed; and the foot opening should point toward a wall, not into the shop. Assistants should carry monitoring disks as radiographers do, and customers should be warned of radiation hazards.

Erythredema Polyneuropathy.—A severe case of erythredema polyneuropathy in a patient admitted to the Royal Edinburgh Hospital for Sick Children suggested so many features of a hyperactive sympathetic nervous system that the infant's urinary sympathin (epinephrine and levarterenol) excretion was determined by Farquhar and co-workers (*Brit. M. J.* 2:276, 1956). The results were of sufficient interest to justify the investigation of other cases and controls. Among signs of sympathetic hyperactivity in infants with erythredema polyneuropathy are arteriolar spasm in the extremities, hypertension, tachycardia, bowel and bladder relaxation, pupillary dilatation, and sweating. The urinary sympathin excretion in 24 hours in these infants varied from 17 to 74 mcg. (16 mcg. is normal). The response to ganglionic and adrenergic blocking agents is suggestive of a hyperactive sympathetic nervous system in these children. Farquhar states that erythredema polyneuropathy may represent the misdirected zeal of an inexperienced defense mechanism to a number of obnoxious stimuli in certain predisposed infants.

Liability Laws.—Physicians on the staffs of hospitals in England have agreed to support Scottish physicians in a campaign to change the law relating to legal liability in the hospital service. The following resolution was passed at a meeting of the central consultants and specialists' committee, which represents hospital medical staff throughout England: "It is not in the best interest of British medicine and the British people that the hospital doctors of this country should have the legal status of technical employees of the hospital authority." This is what the law at present makes them. This resolution resulted from a request by Dr. A. Smith of Lanarkshire, chairman of the Scottish consultants and specialists' committee, for support from English physicians of the Scottish physicians' campaign against the existing law. Before the health service began in 1948, doctor and patient had a definite personal relationship, in which the patient's interests came first. Under existing regulations the physician's first legal responsibility is to the state. Recent court judgments have altered the doctor-patient relationship, with the state as a third party. The physician is

now responsible to the patient through the state. This would lead to a situation, according to Dr. Smith, in which a doctor would become a technical expert to carry out the orders of the Minister of Health.

Food Poisoning.—Sir William Savage has called attention to the increased incidence of food poisoning (*Brit. M. J.* 2:317, 1956). After allowances are made for the improved facilities for bacteriological investigation and the increased awareness of the condition by general practitioners, there is clear evidence of a marked increase over the last 10 or 20 years. Savage further states that the evidence points to an extension of salmonellosis in animals. There has been a rise in the number of persons who, either having symptomless cases or being temporary carriers, are excreting Salmonella organisms in their feces. The increase in food poisoning is attributed to various causes. Many people now eat in places where defects in hygiene may result in the poisoning of a large number of customers. There has been an extension of the bulk preparation of packaged foods, which increases the risk of widespread contamination with Salmonella. The increased use of bulked eggs, imported frozen from abroad, for the preparation of confectionery has been responsible for outbreaks of food poisoning by Salmonella of hitherto unknown types. The association of liquid egg foods with food poisoning in Great Britain has been definitely established. Further, the increase in the number of human carriers of Salmonella organisms has supplied more opportunities for food to be infected by those handling it.

The annual number of sporadic cases of infection with Salmonella is large, and Savage urges that official steps be taken to define more precisely the cases to be reported as food poisoning. Prompt reporting and cooperation between the general practitioner and the health officer are essential for the investigation of outbreaks. Savage blames the public health authorities for not keeping up with the revolution in food habits. The preparation of more and more food is passing into the hands of commercial food handlers, whose practices often fall short of essential hygienic standards. The production of foods such as meat pies and prepared meat dishes is now an extensive industry, with many of the smaller concerns failing to observe adequate hygienic standards. The use of machinery for food processing increases the risk of food poisoning because of the difficulty of effective cleaning and sterilization. Dried or frozen egg mixtures are liable not only to bacterial infection in the mixing stages but to distribution of the bacteria through the mass, with extensive multiplication before usage. The author concludes that the dangers resulting from changes in food habits are not adequately guarded even by the latest food control orders.

Dangers of the Trendelenburg Position.—The Trendelenburg position for operations within the pelvis is claimed to be both obsolete and dangerous by Inglis and Brooke (*Brit. M. J.* 2: 343, 1956). Originally devised to aid access to the pelvis in gynecologic, urologic, and proctologic operations, the introduction of muscle relaxants and balanced anesthesia has made this possible with the patient in the horizontal position. Far from giving better access to the pelvic cavity, the Trendelenburg position does the reverse, because the more the head is lowered the further does the symphysis pubis obscure the view, with the result that the surgeon must stand with his head at an angle. There are also decided disadvantages from the anesthetist's point of view. Respiration is impaired by the weight of the abdominal contents resting on the diaphragm and vasomotor tone is depressed, with the result that vasomotor collapse is masked, as no fall in blood pressure may be seen. The increased venous return from the lower limbs and abdomen may result in embarrassment of the heart if the action of its right side is impaired, and as the venous return from the head is slowed there is an increased tendency to cerebral thrombosis. In emergency cases there is a real danger of regurgitation of gastric contents, which can, however, be prevented by the use of a cuffed endotracheal tube with free drainage from the pharynx. Respiratory secretions may also gravitate down the endotracheal tube and repeated suction become necessary. In recent years many instances of tracheal plexus palsies after the use of arm boards, shoulder rests, and harnesses used in conjunction with the Trendelenburg position have been reported.

Russian Blood Substitutes.—During a recent visit of a delegation of Russian physicians, Dr. L. G. Bogomolova of the Blood Transfusion Institute, Leningrad, described some of the blood preparations and blood substitutes used in Russia. A process has been worked out for obtaining dried hemoglobin from blood without transformation to methemoglobin. It is used to increase the effectiveness of plasma. A preparation, unknown in the rest of Europe and in the United States, is obtained by repeated autoclaving of serum at 125 C. The albumin disintegrates and forms a transparent brown fluid, which is claimed to stimulate the healing of ulcers when given intramuscularly. Over 1,000 patients with peptic ulcer were treated with the preparation, with a reported improvement in 90% and complete healing in 40%. Another claim made for this sterilized serum is that it dissolves penicillin and that the resulting solution given intramuscularly serves as a long-acting antibiotic preparation. A hormonal preparation obtained from retroplacental blood is used intramuscularly in Russia for the treatment of ovarian insufficiency and climacteric neuroses and dermatoses.

A preparation known as hemostimulin, made from animal blood and such trace elements as copper, cobalt, and molybdenum, is used to treat hypochromic anemia. It is alleged to increase the hemoglobin level by 1 to 1.5% daily. Fibrin films are widely used in surgery. Since they are transparent, the condition of the wound beneath can be observed without repeated dressings or disturbing the area. As it is readily digested by microorganisms, rapid dissolution of the film can be taken as evidence of infection. Fibrin films impregnated with antibacterial substances are used to prevent the infection of burned surfaces, decubitus ulcers, and skin injuries. Rapidly resolving "bioplastics" made from blood have been used as splints to facilitate gastrointestinal anastomosis. More slowly resolving types are used as intraosseous splints in the treatment of fractures.

As a blood substitute, hypertonic saline solution is preferred to an isotonic solution. Dextrose-saline solutions are often fortified with morphine or with alcohol and barbiturates for the treatment of shock. Ten per cent of stored blood is sometimes added. A preparation obtained by the hydrolysis of blood clot after the extraction of serum and known as aminokrovin is used as a blood substitute in patients with hemorrhage, shock, sepsis, cachexia, hypoproteinemia, and delayed healing. Solutions of the dextran type, known as polyglucin and syncol, are in use as blood substitutes. Russian claims have been made for the preparation of a high molecular weight colloidal carbohydrate suspension, known as AP, without the use of micro-organisms, which are used in the manufacture of dextran. Some progress has been made in the preparation of pectin as a blood substitute. Povidone is also used. A blood substitute made from albumin and comparatively free from anaphylactogenic properties is used under the name of VK-8. This is given in amounts of from 2 to 4 liters in patients with blood loss, shock, and hypoproteinemia. Solution L-103 is an incomplete hydrolysate of animal blood, prepared by the use of ion-exchange resins. Another protein hydrolysate, aminol, has been produced at the Leningrad institute by the enzymic hydrolysis of animal blood. Several combined solutions have been suggested, such as L-103 with 1% human plasma to increase the colloidal properties. UBP is a combination of the dextran syncol with a protein hydrolysate.

Physicians' Incomes.—In reply to a question asked in the House of Commons, Mr. Turton, the Minister of Health, quoted the average gross earnings of general practitioners in Great Britain working under the National Health Service. In 1952 they were $6,270; in 1954 they were $9,013; and in 1955 they were $8,740.

Secrecy in the National Health Service.—Service Committee and Tribunal Regulations provide that when complaints against physicians are heard the committee shall sit in private, unless the respondent physician requests otherwise. The desirability of such privacy has been questioned by the committee on administrative tribunals, sitting under the chairmanship of Sir Oliver Franks. The British Medical Association representatives said that the doctor-patient relationship was based on confidence in the physician and that it would be harmful to that confidence if the complaint received press publicity and was eventually not substantiated. Asked if the "poor patient can get his complaint fairly and impartially judged," Dr. E. A. Gregg, for the B.M.A., said that he was amazed at such a question. All patients have the

right to claim for damages in the courts if they are aggrieved, and they may get free legal aid if necessary. The chairman of the National Health Service tribunal said that he saw no reason why the proceedings should not be public. The suggestion that unreasonable or frivolous complaints might damage a physician's reputation was not a sufficient reason for secrecy. Since 1948, 73 cases have been investigated and in no case did the respondent physician ask that the inquiry be made public. Secrecy in the meetings of regional hospital boards, hospital management committees, and local medical executive councils, all of which operate with the National Health Service, may be no longer possible if a bill before Parliament becomes law. This would give the press and the public the right of admission to meetings of various public bodies, including those mentioned. The bill would also apply to committees or subcommittees appointed by these bodies, including those investigating complaints against physicians, but according to the bill each public body would have the power to exclude the press temporarily. The press would have the right to obtain copies of the proceedings later.

Duodenal Ulcer.—Brown and Wood have described a treatment for chronic duodenal ulcer based on the surgical removal of the ulcer, with conservative gastroduodenal resection (antrodudenectomy) followed by irradiation of the remaining portion of the stomach to reduce the secretion of acid and pepsin, thus reducing the risk of recurrence (*Lancet* **2**:169, 1956). This procedure was adopted because the results of treatment of duodenal ulcer by subtotal gastrectomy with gastrojejunostomy were far from satisfactory, with many patients suffering from recurrent dyspepsia, biliary regurgitation, and loss of weight and strength. The antroduodenectomy is a conservative Billroth 1 operation that allows a liberal portion of stomach to remain and maintains the natural channel for food through the duodenum. Removal of the antrum also lessens the tendency to recurrence. Fine absorbable surgical suture (catgut) is used for the mucosal layer because interrupted nonabsorbable (silk thread) sutures were found by gastroscopy to remain in situ for a year or more, and it was believed that they might have predisposed to recurrence. The irradiation, which consists of a total gastric tissue dose of 2,000 r, is given two months after the operation over a period of three weeks. Antacids are given between the operation and the end of the irradiation to control gastric secretion. Over a four-year period 142 patients with duodenal ulcer have been selected for treatment, which was based on the usual criteria for surgical intervention in duodenal ulcer. Fifty-two were subjected to antroduodenectomy followed by irradiation, and a control series of 48 had antroduodenectomy without irradiation. A prolonged follow-up showed, however, that irradiation has no significant effect in reducing the recurrence rate, which was 12%. Brown and Wood think that the recurrence rate is too high, but they feel encouraged to continue with a modification of the operation because the results in 83% were excellent.

Addiction to Barbiturates.—The Society for the Study of Addiction held a symposium in July on the abuse of barbiturates. Dr. R. A. Hunter (London Hospital) said that barbiturates are drugs of addiction and that they are used more than any others by addicts in Britain. This is because they are too freely prescribed, the reasons for this being that certain patients clamor for them and that in mild psychiatric or psychosomatic disorders they are being used as a short cut to psychotherapy. Simple psychotherapy, which is all that many patients require, takes too long or requires training not possessed by the average practitioner. Barbiturates have now come to be regarded as a placebo for those who are not seriously ill, either mentally or physically. Most barbiturate addicts can be divided into those with benign addiction, whose habituation is mild and interferes little with social function, and those with malignant addiction, who suffer from severe loss of social function. The too-lavish prescription of barbiturates has produced many persons with benign addiction in whom barbiturate abstinence combined with symptoms of intoxication may transform a mild psychiatric disturbance into a more serious one. These patients are true addicts, although the condition might not be recognized until the drug is withheld or the dose increased, to obtain the desired effect, until barbiturate intoxication occurs. Persons with malignant addiction are often patients with severe mental illness who have been sidetracked into drug addiction by barbiturates. Barbiturate addiction is as dangerous as that due to morphine. The speaker deprecated the use of a stimulant such as amphetamine with a barbiturate, because one masks the effects of the other and the patient becomes intoxicated by both. Referring to the use of tranquilizing drugs in mental hospitals, he said that many drugs had been introduced to treat patients but had finished up as drugs to keep the patient quiet.

Dr. Sidney Locket (Oldchurch Hospital, Romford) said that the abuse of barbiturates is deplorable, because they are still the standby in the treatment of epilepsy. He found it hard to believe that the vast quantities used, an average of one tablet daily throughout the year by 4% of the population of Great Britain, are essential for the treatment of disease. In his hospital alone he saw hundreds of patients with barbiturate poisoning every year, many of them suicides or attempted suicides. The total number of patients with barbiturate poisoning treated in British hospitals is about 7,000 a year. They account for 1.21 per 1,000 general hospital admissions in the course of a year, varying from 1.65 in Scotland to 0.69 in Wales. There were no recorded admissions for barbiturate poisoning in Eire. Barbiturates are essential for the treatment of many diseases, and the public should be educated to their limitations and dangers. In 80% of the patients with intoxication admitted to Oldchurch Hospital, the sole or major reason for prescribing barbiturates was insomnia. Many patients had a stock of these drugs at home. Suicides from taking barbiturates have increased sharply, the most recent annual figure being 13 per million. This figure is probably higher because accidental death from barbiturates rather than suicide is frequently returned as a coroner's verdict. Barbiturate misuse falls into four groups: prolonged misuse in moderate overdosage; the use by addicts, often with alcohol; the taking of large doses to induce sleep; and suicide from barbiturates. The speaker did not believe that a combination of barbiturates and alcohol had a greater effect than the sum of the actions of the two components.

Dr. Harold Davis, the chief pharmacist to the Ministry of Health, said that of 100,000 national health service prescriptions in 1955, nearly 10% were for barbiturates or for medicaments containing them. The annual cost of barbiturates under the National Health Service is nearly $4,500,000. This does not include the cost of barbiturates bought outside the service. It was difficult to predict the cost of the new tranquilizers, but they would probably cost more. Dr. F. E. Camps, a pathologist, said that he was certain that many cases of fatal barbiturate poisoning remain undiagnosed because the average general practitioner does not suspect it. He had investigated the blood and urine in several cases of sudden death that would otherwise have been attributed to such conditions as coronary disease and found high concentrations of barbiturate. It is possible that barbiturates cause many undiagnosed deaths in babies.

Cancer of the Lung and Stomach.—Dr. Alan McKenzie has investigated the degree of accuracy in the diagnosis of cancer of the lung and stomach (*Brit. M. J.* **2**:204, 1956) to determine whether these conditions are being overreported. To assemble the necessary data a questionnaire was sent from the general register office to every medical practitioner in respect of every second death ascribed to cancer of the lung or bronchus in January, 1955. If a diagnosis was made after bronchoscopy, detection of tumor cells in sputum or exudate, operation, or autopsy, it was classed as "established." If diagnosis was based on radiological examination or a specialist's consultation it was classed as "corroborated." All diagnoses made on clinical grounds only were described as "unsupported." In the case of carcinoma of the lung 3.2% of diagnoses were unsupported, 63.9% were corroborated, 56.2% were established, and in 2.8% the diagnosis was altered. The corresponding figures for cancer of the stomach were 8.4, 30.4, 59.5, and 1.7 for men and 18, 39.5, 38, and 4.5 for women. According to these figures, cancers of the lung and bronchus are not being overreported on death certificates, but it is still not possible to say whether the disease is being underreported, as most probably happened in the past. Not infrequently the diagnosis of bronchial cancer is not made until after a postmortem examination, and it is probable that the true numbers are still greater than appear from the death registrations.

The only conclusion drawn on the inquiry on stomach cancer is that certification of death from this cause is less likely to be accurate among older than among younger persons and that in a large proportion of those who die over 75 years of age the diagnosis cannot be regarded with complete confidence.

CORRESPONDENCE

ATHLETICS IN SCHOOL

To the Editor:—I appreciate the fact that Dr. S. E. Bilik, for whose work I have profound respect and admiration, has taken the time to comment at length in a recent issue of THE JOURNAL (161:1502 [Aug. 11] 1956) on my article, "A Physician Looks at Athletics" (*J. A. M. A.* 161:573 [June 16] 1956). I am in full accord with the basic principles that Dr. Bilik elucidated in his letter, but I am constrained to point out that he has misinterpreted my article to make it appear that my own opinions are contrary to these principles. I do not imply that there is "some sort of a tug of war between coaches . . . and physicians"; on the contrary, I am one of the many team physicians who enjoy an excellent and mutually profitable relationship with coaches. My position is that adequate health protection of athletic youngsters requires the "joint efforts of physicians, coaches, trainers" working as a team. I share Dr. Bilik's respect for Mr. Schneider, the coach of the high school team for which I am responsible medically. Charlie and I must get along well—he hired me, after he had known me for years and after I had been a player on one of his own high school teams.

Second, nowhere in my article did I state or infer that coaches and trainers misuse their youngsters in order to advance the interests of the school. Of course no coach or trainer does that! I did, however, wish to direct attention to the fact that coaches and trainers—through ignorance, not ill will—often make decisions that adversely and sometimes permanently affect their players' health; that "well-meaning trainers, coaches, and officials cause more disability than they prevent." I plead against ignorance and its inevitable concomitant, indifference. I agree with Dr. Bilik's description of trainers, insofar as the description applies to trainers in colleges and universities. The same broad generalizations cannot, unfortunately, be made about trainers in the secondary schools. I have always enjoyed excellent working relationships with trainers, a fact that is, perhaps, indicated by my recent election to advisory membership in the National Athletic Trainers Association. Continually in other papers and in talks to both physicians and nonmedical personnel interested in the health of athletes, I have emphasized the importance of joint responsibility. I have many times pointed out that, in some areas of overlapping interest, trainers and coaches often exhibit a greater depth and precision of knowledge than do physicians about health and safety measures for the members of their teams.

I am astonished by Dr. Bilik's apparent attitude that team health and safety are not proper and immediate concerns of the physician. Surely Dr. Bilik does not mean to suggest that physicians abrogate their responsibility to supervise and control, if not actually execute, any measures that directly influence health and safety. Trainers and coaches have their part to play, but—and this is the important consideration—the responsibility is joint, not exclusive. Certainly I do not suggest that team physicians buy athletic equipment, but I do suggest that team physicians be familiar with equipment, again so that they are able to execute their advisory responsibilities properly. My feeling is that a physician has every right to "meddle" in those areas concerning health and safety where his special knowledge implies special competence. No, a doctor need not treat every minor injury, but the decision as to whether an injury is minor is, usually, best left to the doctor. Of course first aid will be administered by coaches and trainers, but I urge these coaches and trainers to err on the side of caution and call a physician if there is any doubt at all about the nature or extent of the injury. The dangers of first aid given by laymen to seemingly slightly injured persons have already been well documented in the literature. Dr. Bilik has played a significant, indeed a pioneer, role in the treatment of athletic injuries and in sports medicine generally. However, after 30 years of involvement with nearly every phase of athletics, as player, coach, official, administrator, and team physician, I am not without adequate pegs of practical experience on which to hang my theoretical observations. There are so few physicians who have deep interest and broad knowledge about athletic injuries that I must close this communication with a plea for more, not less, communication between these few physicians.

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ANDROGEN THERAPY

To the Editor:—In the last 20 years the introduction of potent testosterone compounds has for the first time made it possible to induce androgenic effects in patients suffering from male hypogonadism. Soon after the successful synthesis of testosterone, it was found that certain esters, notably the propionate, produce greater androgenic activity, and testosterone propionate became the most popular agent for androgen substitution therapy. This compound is a potent androgen but is not ideal for human therapeutic use because it is only effective when given by frequent intramuscular injections, e.g., 25 mg. three times a week. Methyltestosterone is more convenient because it is effective when swallowed, but only in doses four or more times as large as those of testosterone propionate, rendering it an expensive form of therapy. At the endocrine clinic, University of California School of Medicine, sublingually administered methyltestosterone has been practically as effective as injected testosterone propionate, milligram for milligram (Escamilla and Gordon: Efficacy of Testosterone Compounds Administered Sublingually to Hypogonadal Men, *J. Clin. Endocrinol.* 10:248, 1950). It has the advantages of economy and ease of control; its disadvantage is that tablets must be dissolved slowly in the sublingual or buccal positions, which usually requires 30 to 60 minutes or more.

In the last five years androgen therapy has been simplified somewhat by the use of long-chain testosterone esters, which, when given intramuscularly, exert their effects for approximately one month. These compounds, the cyclopentylpropionate, enanthate, phenylacetate, and hexahydrobenzoate, have replaced the even longer acting pellets because they do not require surgical implantation, have a more even action, and are free of the danger of overdosage from fragmentation of the pellet. They have the disadvantage that their action cannot be terminated when undesired effects appear, e.g., hypercalcemia in osteolytic metastases from carcinoma of the breast.

Recently Herr and co-workers (Herr and others: Synthesis of Potent Oral Anabolic-Androgenic Steroids, Communications to the Editor, *J. Am. Chem. Soc.* 78:500, 1956) described the synthesis of 9α-fluoro-11β-hydroxy-17α-methyltestosterone, known as fluoxymesterone (Halotestin). Lyster and co-workers (Lyster and others: *Endocrinology*, to be published) described the androgenic activity of this compound in the rat. We have administered this compound as tablets for oral use to 10 hypogonadal men, 4 of them with primary testicular hypogonadism and the other 6 having hypogonadism secondary to lack of pituitary gonadotropin. Eight of the 10 had previously been treated with other androgens; in 2 administration of fluoxymesterone was the initial treatment. The maintenance dose, using the criteria of Escamilla and Gordan, in these patients was 10 to 30 mg. of methyltestosterone per day as tablets for buccal administration in seven patients or intramuscularly given testosteronecyclopentylpropionate, 150 to 200 mg. per month, in five patients. In all 10 cases full androgenic effects were achieved and maintained by the oral administration of 1.5 to 2 mg. of fluoxymesterone per day over a period of four to six months. Because of the presence of an 11-hydroxyl group in the molecule, the possibility of corticoid activity was considered; no edema or hypertension occurred.

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BRASS PIPING

To the Editor:—With respect to the article in Business Practice, THE JOURNAL, Feb. 18, page 590, I would like to call attention to the fact that brass piping is not a good insurance against piping troubles. In some cases, even copper piping fails where the water is particularly aggressive, but brass pipe of a type once much used has almost gone out of use because there have been so many failures.

F. J. SCHLINK
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MISCELLANY

THE MEDICAL SOCIETY BULLETIN

Edward R. Pinckney, M.D., Napa, Calif.

Most large medical societies already publish their own periodicals. What about the small society? It, too, should have a regular means of communication. The basic purpose of having a monthly bulletin put out by the medical society consists primarily of getting local medical news of interest to its physician members. It is just another means of the "grass roots" approach to the dissemination of information of special importance to members of the particular society. Any physician who has attended small society meetings has been witness to situations where there was either (1) a guest lecturer and no business meeting, so that the physician remained completely oblivious to the medicopolitical matters that concern him; or (2) an excessively prolonged business meeting where a particularly interesting point of discussion obliterated the necessary planned program.

Between meetings, an active medical society office floods its members' mailboxes with notices of future meetings, lists of applicants to be voted on, and comments on a random sample of medical business matters, all of which are of great importance but easily overlooked because they arrive amongst the piles of third-class mail. Besides this onslaught of what might honestly be termed necessary information to the private practitioner, there are many other matters that should be brought to the doctor's attention in such a way that he will not only find the literature easy to read but be able to utilize the information. Some examples would include announcements concerning (1) local, state, and federal legislation (both before and after voting takes place, with comments on how the result of same will affect his practice); (2) postgraduate courses; (3) future meetings; and (4) general state medical policies.

What else can a medical society bulletin do for its members? Not only can it announce the future society meetings but, of even greater importance, it can present the conclusions of the executive committee as well as the results of the meetings of all the other specialized committees, so that the doctor has a bit of time to consider recommendations before he is asked to vote on them. Local hospital news, results of epidemiological investigations pertinent to the area, and even a gossip column telling, for example, where some of the doctors and their families are having their summer vacations are just a few more items that might be of particular interest to society members. This is another means of solidifying the professional and family outlook toward the practice of medicine.

Another equally important service of the bulletin is to provide a summary of the past society meeting. Often enough, a well-intentioned physician is unable to attend the regular meeting of the society for various reasons. Without an official society publication, the absent doctor usually hears of his society's decisions in a vague secondhand way, if at all. Yet these matters can be of great importance to him in his future practice and his relations with his fellow members. Actually, it is easy to sum up all this material, plus much more strictly local information, in about a dozen 6-by-9-in. carefully edited pages. Intersperse these pages with a few local and national advertisements, some necessary and periodic statistics, and a few opinionated expressions, and you have a monthly medical society bulletin.

In essence, then, the bulletin provides a small, up-to-the-minute guide to local business aspects of medicine. Unless your society happens to have an unusually prolific scientific writer, the bulletin should make no attempt to compete with all the other medical publications primarily concerned with medical research and clinical results. This, however, is not meant to deter a local physician from presenting an unusual clinical case or bringing to light some new idea he has been working on.

Distribution of this bulletin, not only to the members of the society and the auxiliary but also to members of the allied professions (e. g., pharmacists, detail men, community leaders, voluntary health workers, and advertisers) tends to promote much better public relations. The public is made to realize that the medical society is not a "secret" society and that its findings and discussions are of such a nature that the medical profession is not ashamed to have them known. With only this bit of background, it seems pretty hard to refute the idea that even the smallest society should have some form of monthly publication to incorporate all the above information.

How does one go about obtaining all the assets previously listed? In other words, how do you get a bulletin going, how much does it cost, who pays for it, and where do you get the people to find the time to do such a thing? Before such a venture is begun, the majority of the society members must really want such an organ of communication and be willing to underwrite the cost of the first few issues, if necessary. When one weighs the cost of publishing a bulletin of this type, one must reasonably deduct the cost of secretarial help, office facilities, and supplies, stationery, and postage that are already being used in dispensing information. But before actually going into cost, which seems to end up as the all-important factor, let us go back to developing the idea.

Once the society agrees that this is a venture worth attempting, a definite trial period should be established, say, six months. Next, a publication committee should be appointed and empowered to handle all necessary transactions in the name of the society. The committee elects its chairman, who is usually designated as the editor of the bulletin. No article could tell you which man to pick for this position, but surely every society has a few members who are interested in this sort of work. Aside from one or two organizational meetings, it should not be necessary for the members of the committee to devote more than two hours a month to this publication, and the editor can do a very substantial job if he plans to give one and one-half hours a week to it.

In more detail, the editor's work will consist of gathering together the pertinent information; proofing, cutting, and adding where necessary; and reviewing the entire concept with the committee. The hardest task the editor may have to face during the formative period is that of getting the material forwarded to his desk. This actually amounts to his sharing his burden among members of the society. Once procedures are set, the chairmen of the different society committees send the editor brief reports of their meetings, when held. It should take a particular physician's secretary no more than 15 minutes to write this up and send it to the editor. The society's selected secretary follows the same procedure with the executive committee minutes, which he is obligated to write up anyway. He also can include information on the next meeting, information on and pictures of new applicants, and an outline of the society's financial state. Reports on legislative and other political actions that affect medicine are readily furnished by the state association. The health officer will furnish vital statistics as well as pertinent information about public health affecting the private practitioner. Editorials may provide an opportunity for members to express their opinions. All of the material is typewritten, with double-spacing and wide margins, and sent to the editor. The number of words to a page depends on the type size used and on page size. The editor should usually stipulate the number of words needed for each particular article he requests. After one or two issues, the editor will find he is overstocked with items of interest, pictures of the new hospital, exhibits, and displays. The amount of material published is limited only by the allocated cost of production.

As regards cost, the easiest solution is to leave it to someone else. While this may sound facetious, it is meant to be quite serious. The simplest way is to hire an advertising counsel on a percentage basis. The net income to the society from advertising may be used to lessen or even to entirely defray the cost of

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publication. Hiring a nonmedical advertising counsel provides many other benefits, one of which is that the physician does not have to solicit business. A good advertising counsel can handle the entire business affairs of the bulletin, from layout to collection of accounts. He can be the one to make contracts and deal with the printer directly. While strictly guided by the policies of the publications committee of the society, he nevertheless eliminates the need for what might be considered unethical activity on the part of a physician. His business is simply business, and the society is limited to purely medical participation.

While cost varies in all parts of the country, $100 a month, before advertising is even considered, would probably sustain a 16-page bulletin. And, if just 5 or 6 of those 16 pages were used for advertising, the bulletin could be self-supporting. The typing of address stickers, the application of the stickers to the bulletin, and sorting and delivery to the post office can be made a very worthwhile service of the women's auxiliary.

In our busy present-day medical practice, the political and commercial side of medicine is equally as important as the clinical side. Here is just one more way of getting information to all members of a society, whether large or small, by a means economically within the society's means.

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THE LEISURE CORNER

SCALE-MODEL RAILROADING

Scale-model railroading, a hobby that many doctors have found particularly suited for their leisure time, combines creativity and "operating" pleasure in equal measure. The fact that most model railroaders are adults contradicts the prevalent belief of a portion of the public that "playing with trains" is only for children. There is a vast difference between the familiar toy train set and a scale-model railroad layout. The truth is that building and operating a model railroad empire requires more skill and patience than most youngsters possess, although a sizable number of teen-agers are model rail enthusiasts. Few women, by the way, are independent model rail fans, but many become absorbed in the hobby once their husbands adopt it.

The objective of the serious model railroader is the creation of a completely authentic railroad empire. This involves such activities as the actual construction of locomotives and freight or passenger cars, the designing and wiring of track, the building and painting of scenery, and the construction of such miniature buildings as stations, factories, stores, and residences. In pursuit of reality, some model railroaders have re-created famous railroad problem areas and have actually solved the trouble through ingenious track plans. Others concentrate on scenery and build to scale a duplicate of a section of their own home town.

The advanced model railroader makes use of such skills as an electrician, a carpenter, a traffic engineer, and an artist have. The beginner, however, must master only a few simple tools: screw driver, small hammer, long-nose pliers, model knife, and small file. Basic carpentry is helpful in constructing the supporting frame for track; soldering, painting with an airbrush, drilling, and tapping are skills that come in handy later on. Although most hobbyists in this field limit themselves to relatively small layouts—perhaps covering an area of 5 by 10 ft.—some veterans build layouts as large as 30 by 30 ft. that take years to complete.

The novice hobbyist will find plenty of help available. Owners and employees of hobby shops will assist the beginner in getting started. Many cities have model railroad clubs, which welcome newcomers. There is a nationwide organization for rail fans: the National Model Railroad Association, with headquarters in Canton, Ohio. Perhaps most valuable are a number of basic books and periodicals: "Practical Guide to Model Railroading," "How to Wire Your Model Railroad," "Track and Layout," and *Model Railroader* and *Model Trains*. All of these are published in Milwaukee, a city that boasts the oldest model railroad club in the country and the birthplace of the national association.

When a basic layout has been created, the model railroader enters into the second phase of his hobby: the operation of the trains. (Actually, a layout is never "finished"; the possibilities for expansion are limited only by the amount of space available.) Variations in operation are endless. Many enthusiasts with large layouts even follow the timetables of existing railroad lines, while, in model railroad clubs, extensive operations may take place with members serving as engineers, towermen, yardmasters, switchmen, and even dispatchers.

With the growing popularity of the HO gauge model train, complex layouts can be set up in relatively small areas. The most popular spot for the pursuit of the hobby is a basement, but attics, spare rooms, and garages are often used. Some hobbyists even manage to find space in house trailers. The gauge of the track is determined by the inside distance between the rails. O gauge is the familiar "toy train" size and is one forty-eighth the size of the actual train; HO gauge is half the size of O gauge; S gauge is midway in size between O and HO; and TT, or table-top, gauge is less than one-half the size of O gauge, or one one-hundred-twentieth the size of the actual train. Cost makes little difference in choosing which gauge you wish to use. It will depend on available space and the amount of detail desired.

Compared with the serious pursuit of such hobbies as photography, model railroading is inexpensive. The initial investment need not be great: power-pack (which operates the locomotive) averages about $12; locomotive kits are available at $4 and up; freight car kits are between $2 and $4; track and scenery can be bought for a few cents per unit. Assembled, ready-to-run scale-model equipment costs slightly more. After the first major expenditures, the average hobbyist, according to *Model Railroader*, spends about $2.85 a week on his hobby. The biggest investment in any layout is in time and creative thought.

Specialization in model railroading keeps long-time enthusiasts interested. A West Coast physician builds nothing but models of cars on the Sacramento Northern interurban line. A Brookfield, Mass., man, a signal maintainer of the Boston and Maine Railroad, likes signaling so well that he built an elaborate signal system for his back-porch model layout. Others find their greatest pleasure in building bridges, cabooses, or stations. Those with a bent for history like to duplicate ancient trains and track layouts. Some fans, with time and money, will visit and duplicate existing trains and lines that are, in some way, unique, such as the Mojave Northern line, which runs only 15 miles over the Mojave desert to link a quarry with a cement plant.

Just why scale-model railroading should exert such fascination over so many American males is a matter of individual opinion, but the manufacturers, hobby shop proprietors, and publishers who serve the field generally agree that it is related to the well-established appeal of real railroading—the whistle in the night, the power of huge locomotives, the lure of distant places. Physicians who are model rail enthusiasts have found it eminently satisfactory for filling their leisure hours. Since they find time for travel difficult to obtain, the vicarious pleasure they achieve through operation of a layout is easily understandable. The relaxation found in doing something mechanical and, at the same time, artistic appeals to many doctors. Then, too, model railroading is ideal for a person who may be called away suddenly—a few minutes of work with the layout can be as refreshing as several hours. One pediatrician has even put his layout to work in establishing rapport with his patients; he invites youngsters to his home occasionally to watch while he and members of a model railroad club operate the trains. Whatever the reasons for the growing appeal of this hobby, the fact remains that there are more model locomotives plying tracks in basements and spare rooms than there are actual locomotives on real railroads.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

The Blood Picture in Rubella: Its Place in Diagnosis. F. K. M. Hillenbrand. Lancet 2:66-68 (July 14) 1956 [London, England].

The author investigated the blood picture of patients with rubella in the Falkland Islands as well as in Britain. He found that in conjunction with lymph-node enlargement the results of routine white blood cell counts are sufficiently characteristic in rubella to permit a confident diagnosis even of subclinical infection with german measles, in which symptoms may pass unnoticed. This aid to early diagnosis can be very important when it is necessary to protect by immunization a pregnant woman who has been exposed to the infection. The lymphatic hyperplasia, mainly of the postauricular and occipital lymph nodes, which typically follows rubella and may persist for many months, is associated with the presence of Türk cells and plasma cells in the blood. When persistent lymph-node enlargement is associated with these blood changes, a retrospective diagnosis of rubella can be made. The fact that patients with rubella (clinical or subclinical) examined between the first and ninth days showed plasma cells or Türk cells, which nearly always persisted until the sixth week, means that a person not showing these changes is very unlikely to have had rubella. In their absence, therefore, there is no need to fear damage to the offspring of a pregnant woman or to consider the advisability of therapeutic abortion.

An Epidemic Caused by APC Virus. R. Glander, G. A. v. Harnack and H. Lippelt. Deutsche med. Wchnschr. 81:1147-1149 (July 20) 1956 (In German) [Stuttgart, Germany].

The occurrence of an epidemic of respiratory disease in Hamburg, Germany, in the course of the last six months of 1955 is described. In the beginning, only children predominantly of school age were affected, but later adults also became ill. Thirty-two girls and 23 boys between the ages of 1½ and 14 years were admitted to the pediatric department of the General Hospital of Hamburg-Heidelberg or to the pediatric clinic of the University of Hamburg. The children had fever mostly above 103 F (39.5 C), which was remittent or intermittent and continued for from two to eight days. Upper respiratory symptoms were limited to the nose and pharynx. The tongue had a white or brownish coating, but the edges and the tip of the tongue were dark red. Cervical lymph nodes were enlarged. Eighteen children complained of lower abdominal pain, 7 had diarrhea, and 21 vomiting and nausea. Nuchal rigidity was observed in three children, but lumbar puncture did not reveal any abnormality. Forty-seven children had characteristic eye symptoms; 14 had unilateral conjunctivitis and 33 had bilateral conjunctivitis. Twenty-five children had leukopenia, and 14 of these had 70% granulocytes with segmentation nuclei. A deviation to the left in the granulocytes with a maximum of 34% cells with rod-shaped nuclei and immature cells was observed in 26 children. Eosinophils were absent in 50% of the patients. Toxic granulation of the cells with segmentation nuclei was observed occasionally. The hematological picture thus was similar to that in measles. The erythrocyte sedimentation rate varied from 10 to 30 mm. in 32 children. The clinical aspect suggested that the disease was caused by adenoid-pharyngeal-conjunctival (APC) viruses, but for technical reasons attempts at isolation could not be made. Complement fixation tests carried out by the virus department of the Children's Hospital of Philadelphia revealed that the epidemic respiratory disease was caused by APC virus of type 3; all tested serums contained neutralizing antibodies against this virus type. Antibiotics did not influence the course of the fever. Temperature was restored to normal by symptomatic treatment in most of the patients, but occasionally convalescence dragged on for several weeks.

Report on an Epidemic Caused by APC Virus. E. Breckoff. Deutsche med. Wchnschr. 81:1149-1151 (July 20) 1956 (In German) [Stuttgart, Germany].

Breckoff reports on 241 children with acute respiratory disease who were treated by him at their homes in villages on the outskirts of Hamburg during the epidemic outbreak described in the preceding paper. Most of the patients were between the ages of 5 and 10 years and only 22 (9%) were less than 2 years old. The epidemic began during the summer vacations, and the number of cases increased considerably with reopening of the schools, so that of the 1,500 children of school age 300 to 400 were absent from school at the same time. In some families several siblings became ill, and the incubation period varied between four and five days. The symptoms and signs described in the previous paper were also observed in these patients. The pharyngeal mucosa was very red, there were petechiae at the soft palate, and the posterior pharyngeal wall showed a fibrinous coating of dirty-grey color. Nose breathing was considerably hampered or even obstructed. The nasal mucosa was swollen, the conchae thickened, and the vessels distended. Many children complained of earache, and changes in the tympanum consisted of injected and tortuous vessels similar to those seen in the conjunctivas. A dark-red ring surrounded the tympanum. None of the children coughed. Bronchitis, pleuritis, and bronchopneumonia were absent. There were no deaths. All children recovered completely on symptomatic treatment. There was a definite tendency to relapses, which occurred within two or three weeks, but in an attenuated form. It took many weeks and even months until the work capacity of the children was completely restored.

Outbreak of Unusual Form of Pneumonia at Camp Gruber, Oklahoma, in 1944: Follow-Up Studies Implicating Histoplasma Capsulatum as the Etiologic Agent. A. E. Feller, M. L. Furcolow, H. W. Larsh and others. Am. J. Med. 21:184-192 (Aug.) 1956 [New York].

An outbreak of an unusual form of pneumonia occurred at Camp Gruber, Okla., in the spring of 1944. Twenty-seven men were admitted to the Station Hospital at the camp, all of whom had entered an abandoned storm cellar during field maneuvers, about 12 days before the onset of the disease. The closed chamber and the hot air currents in the storm cellar created ideal conditions for the air-borne dissemination of spores that might have been inhaled by the occupants. The illness was characterized by the sudden onset of predominantly constitutional symptoms, substernal pain, and constriction in the chest. Most of the patients were severely ill for from two to four weeks. The scarcity and minimal nature of physical signs over the lungs were impressive in contrast to the widespread roentgenographic changes. A disseminated type of pneumonitis occurred during the acute illness that subsequently tended to become nodular in character and faded slowly during the period of observation. Later examination showed that calcification, which in most patients was of a miliary type involving all lobes, had developed in the lungs. Etiological studies made during the outbreak and for several months thereafter failed to reveal the cause.

A comprehensive follow-up study was carried out on 26 of the 27 men who were hospitalized in the spring of 1944. In addition 11 other soldiers were studied, 3 of whom were men in whom roentgenograms of the chest had revealed characteristic widespread pulmonary infiltration but whose illnesses had occurred at Camp Gruber in 1943, one year before the outbreak of the

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The place of publication of the periodicals appears in brackets preceding each abstract.

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epidemic. The remaining eight men belonged to the same military organizations as the men involved in the epidemic, but they had remained well. The results of the follow-up study and certain other data in the literature since the occurrence of the epidemic indicate that the outbreak in 1944 at Camp Gruber was caused by Histoplasma capsulatum. The evidence may be summarized as follows: (1) the presence of a positive reaction to the histoplasmin skin test in all the men who were known to have had the characteristic pulmonary lesions both in 1943 and in 1944; (2) the presence of specific antibody for H. capsulatum demonstrable in the serums collected during the convalescent phase in 1944; (3) the presence of similar antibody in serums collected during postconvalescence in 1950 and 1951 but in reduced titer as compared with the specimens collected in 1944; (4) the development of miliary calcification demonstrable roentgenographically in the chest roentgenograms of most of the men in whom diffuse pulmonary infiltration was revealed both in 1943 and in the outbreak of 1944; and (5) the isolation of H. capsulatum from the abandoned storm cellar that epidemiologically was the common source of exposure. Although the evidence is convincing that H. capsulatum was the cause of the epidemic, the organism was not isolated from any of the patients. The cultures were observed for an insufficient period, however, and subcultures of the organs of the mice injected with sputums were not made. The epidemic reported on is the first proved to have been caused by histoplasmosis. The results of the authors' study reemphasize the severity of the disease, which resulted in prolonged hospitalization of the men involved, in disability discharges from the Army for three-fourths of the men, and in persistence of pulmonary symptoms in many of the men some six to seven years after the epidemic.

Prevention of Acute Respiratory Illness in Recruits by Adenovirus (RI-APC-ARD) Vaccine. M. R. Hilleman, R. A. Stallones, R. L. Gauld, M. S. Warfield and S. A. Anderson. Proc. Soc. Exper. Biol. & Med. **92**:377-383 (June) 1956 [Utica, N. Y.].

Acute respiratory illness caused by viruses of the RI (also called APC or ARD) family is a major medical problem to the armed forces. In certain recruit training camps these viruses have been found responsible for as many as 90% of the hospital admissions for respiratory disease during the winter months and for up to 60% of all hospital admissions for these illnesses during the entire year. The viruses of the RI family comprise at least 14 distinct serotypes, but only 3 of these, types 3, 4, and 7, have been found important in the causation of respiratory illness of soldiers, types 4 and 7 being most frequent. The authors describe the development in their laboratory of a bivalent, formalin-killed, types 4 and 7 vaccine prepared from infected monkey kidney tissue cultures. It induced high levels of neutralizing antibody in human volunteers given a single 1 ml. dose of vaccine intramuscularly. In 311 recruits vaccinated at Fort Dix, N. J., it produced a marked reduction in the incidence of acute respiratory illness beginning one week after the initial dose of vaccine; only 4.8% of those receiving RI vaccine were hospitalized for respiratory illness as compared with 23.8% of the control group of 313 who received placebos.

Clinical and Laboratory Studies in Patients with Respiratory Disease Caused by Adenoviruses (RI-APC-ARD Agents). H. E. Dascomb and M. R. Hilleman. Am. J. Med. **21**:161-174 (Aug.) 1956 [New York].

Forty-five United States Army recruits in basic training at Fort Dix, N. J., were hospitalized with a febrile acute respiratory illness caused by viruses belonging to the recently discovered RI family, which is also called the APC family and includes agents designated ARD. All 11 viruses recovered from the patients were of 7 RI type, and neutralizing antibody primarily against this agent developed in the patients. These findings suggested that type 7 virus was the causative agent of the illness in most of the patients in this epidemic. The patients had a basic syndrome of fever, pharyngitis, and cough, which was often accompanied by conjunctivitis, rhinitis, otitis, laryngitis, tracheobronchitis, bronchiolitis, or pneumonitis, associated with constitutional symptoms. The RI-caused illnesses of these patients belong in the spectrum of syndromes designated as undifferentiated acute respiratory disease (ARD), pharyngoconjunctival fever, nonstreptococcic exudative pharyngitis, bronchitis resembling atypical pneumonia, and primary atypical pneumonia, unassociated with the development of cold or Streptococcus MG agglutinins. Collectively the patients belonged to the group with the inclusive syndrome of febrile catarrh described by Stuart-Harris and coworkers. The "typical" common cold and primary atypical pneumonia associated with the development of cold and Streptococcus MG agglutinins were not among the entities caused by the RI viruses.

An Epidemic of Histoplasmosis Among School Children in Arkansas. T. D. Y. Chin, P. E. Ney, B. N. Saltzman and others. South. M. J. **49**:785-792 (Aug.) 1956 [Birmingham, Ala.].

Clinical and epidemiological features of an outbreak of histoplasmosis occurring among a group of children in an elementary school in Mountain Home, Ark., during the spring of 1955 are described. There were 36 reported cases. In an attempt to ascertain the incidence of inapparent infection with the aid of skin tests, serologic tests, and chest roentgenograms, 381 children between the ages of 6 and 10 years enrolled in the first five grades were examined. The results of the tests suggested that about 146 children were probably infected. A group of sixth graders from another school, located about one-half mile away, were selected as controls.

The disease was an acute febrile illness characterized by a sudden onset of fever, general malaise, weakness, and lassitude. Some of the patients also complained of headache and anorexia. The chest complaints were mild, with nonproductive cough and vague chest pain. The course was self-limited, and the illness lasted from a few days to four or five weeks, with temperature being restored to normal by lysis. Antibiotics such as penicillin, streptomycin, chlortetracycline (Aureomycin), and oxytetracycline (Terramycin) had no significant effect on the course of the disease. Roentgenograms revealed varying degrees of infiltration ranging from a few scattered to diffusely disseminated discrete infiltrations throughout both lung fields. Enlargement of the hilar lymph nodes was usually present. Thirty-five of the 36 children whose cases were reported had a positive reaction to the histoplasmin skin test and none reacted to tuberculin. Twenty-five patients had a positive reaction of the blood to Histoplasma capsulatum, 27 had roentgen ray evidence of infection, and 32 had either a positive reaction to the serologic test or positive results from x-ray examination.

Significantly higher percentages of histoplasmin sensitivity, positive reactions of the blood to Histoplasma capsulatum, and positive results of x-ray examinations were observed among the children in the school in Mountain Home, as compared with those among the controls. These findings indicate that the children acquired their infection within the environs of the Mountain Home elementary school. It appears from epidemiological, serologic, and clinical findings that coal that was delivered and dumped just outside the windows of classroom 2-A, in which the highest percentage of children with positive reactions to histoplasmin skin test and serologic tests were observed, was the most likely source of infection. However, Histoplasma capsulatum was not recovered from the coal or dust samples. No single incident of group activities outside the schoolhouse, such as picnicking or visiting a farm or cave, which according to previous reports might have been associated with infection, could be elicited.

Syndromes Associated with "Allergic" Vasculitis. R. P. McCombs, J. F. Patterson and H. E. MacMahon. New England J. Med. **255**:251-261 (Aug. 9) 1956 [Boston].

Vasculitis of varying degrees of severity is commonly observed in conditions caused by hypersensitivity. It is also a common denominator in several conditions the cause of which is uncertain but in which there are strong suggestions that hypersensitivity may be an important factor. It is suggested that the term "allergic" vasculitis be used to designate this disorder, which was observed in 19 men and 11 women who did not have systemic lupus erythematosus or periarteritis nodosa. Eighteen of the patients were classified as having one of the following clinical syndromes: contact dermatitis, with generalized sensitization or "id" reaction in two, urticaria with angioneurotic edema in two, vascular purpura in eight, erythema nodosum in three, and dermatomyositis in three. The remaining 12 patients could not

be classified under any recognizable syndrome; in 3 of them peripheral edema without other apparent cause was induced by "allergic" vasculitis.

The manifestations of vasculitis in the patients varied and consisted of arthralgias, edema, purpura, fever, weight loss, subcutaneous nodules, pneumonitis, dermatitis, muscle tenderness and weakness, urticaria, neuritis, gastrointestinal bleeding, and renal failure. Drugs functioned as antigens in seven patients and antibiotics in three, an infection seemed to be the primary cause in two, and a tumor in the left upper lobe of the lung seemed to be serving as an antigen in another patient. Vascular damage probably resulted from a reaction of antigen and antibody fixed in the vessel wall. Removal of the antigen, if possible, leads to cure. Nineteen patients received treatment with cortisone and other adrenal steroids, several of these on more than one occassion and each time with benefit. It seems that the "allergic" vasculitis reaction is more or less specifically suppressed by adrenal steroids. The prognosis for recovery is good in all patients except those with renal lesions. Four patients died, and all of them had renal failure.

The occurrence of edema as a manifestation of "allergic" vasculitis has not previously been emphasized. Skin and muscle biopsies should be used as diagnostic procedures in any patient with peripheral edema of obscure origin.

SURGERY

Primary Chylopericardium and Its Surgical Treatment. A. P. Naef. Dis. Chest 30:160-165 (Aug.) 1956 [Chicago].

Naef reports a case of chylopericardium successfully treated by ligation of the thoracic duct. Up to 1954 no other case had been reported in the world literature. The diagnosis is easy to establish by chemical examination of the milky fluid aspirated from the pericardium. The etiology is doubtful, because in this case the history revealed a definite trauma as well as an inflammatory bronchopulmonary episode. There was no mediastinal tumor as in a somewhat different case reported by Groves-Effler in 1954. From the anatomic standpoint the etiology is extremely difficult to explain, as normal anatomy knows of no relation whatsoever between the pericardium and the thoracic duct. The treatment of chylopericardium consists in surgical exploration of the situation. It will always be extremely difficult to demonstrate and obliterate the abnormal communication, and therefore one has to be satisfied with ligation of the thoracic duct to prevent cardiac tamponade. Local irritation of the pericardium by the chylous fluid may lead to chronic pericardial constriction and thus necessitate ultimate cardiac decortication. To prevent this future complication, the surgical treatment of chylopericardium in the acute state must be early.

Benign Chondroblastoma. M. G. Kunkel, D. C. Dahlin and H. H. Young. J. Bone & Joint Surg. 38-A:817-826 (July) 1956 [Boston].

Benign chondroblastoma, which is a rare neoplasm of cartilaginous derivation, has become firmly established as a distinct entity among primary tumors of bone. Codman and Ewing both described it, the latter calling it a "calcifying" giant-cell tumor. Later it became known as Codman's tumor. Jaffe and Lichtenstein renamed it "benign chondroblastoma of bone." A thorough review of all the cases of bone tumor at the Mayo Clinic revealed 16 such tumors in patients ranging in age from 8 to 54 years. These patients constituted less than 1% of the total number of patients listed as having primary tumors of bone. The histological features of chondroblastoma place it in the group of benign tumors of cartilaginous derivation in which chondromas, osteocartilaginous exostoses, and chondromyxoid fibromas also belong.

In 13 of the patients the presenting complaint was local pain; swelling occurred in one case. Symptoms were sometimes present for a long time. The tumors, which were variable in size, were mostly composed of a dark blue-gray substance that was either friable or rubbery and were sometimes surrounded by a thin zone of sclerotic bone. In some lesions cystic changes gave the specimen a variegated appearance. There was histological evidence in two patients that benign chondroblastoma is related to chondromyxoid fibroma of bone. Removal of the tumor by curettage was performed in 10 patients, and in 6 of them supplementary roentgen therapy was also employed. In one of the six the tumor recurred nine years after the first treatment, but there has been no recurrence since the second excision. Of two patients treated by amputation, one was well eight years later and the other could not be traced. None of these patients had multiple tumors, and none with multiple tumors have been reported in the literature. These tumors require careful evaluation, because errors in diagnosis may lead to overtreatment and even to amputation. Copeland and Geshickter have discussed a malignant form of chondroblastoma, but other investigators have not recognized malignant types. It seems therefore that the tumors interpreted as malignant chondroblastoma fall more logically into the chondrosarcoma group or the osteogenic sarcoma group.

The Application of an Induced Bronchial Collateral Circulation to the Coronary Arteries by Cardiopneumonopexy: I. Anatomical Observations. J. L. Kline, H. Stern, W. E. Bloomer and A. A. Liebow. Am. J. Path. 3:663-693 (July-Aug.) 1956 [Ann Arbor, Mich.].

The fact that the human heart can become independent of its usual source of blood at the orifices of the coronary arteries in the sinuses of Valsalva has encouraged attempts to induce a collateral circulation to the heart. Kline and associates list four principles that have been employed to induce collateral circulation. They show in experiments on dogs that a collateral circulation induced in a lung by ligature of the pulmonary artery can be extended to the coronary arteries by cardiopneumonopexy. The collaterals to the heart, as demonstrated in Vinylite casts, can be classified as transpleural, retrocardiac, and intercoronary. Factors governing the development of the transpleural collaterals to the heart are incompletely understood but are probably the same as those that determine the development of newly formed collaterals via adhesions anywhere to lung deprived of its pulmonary arterial inflow. The retrocardiac collaterals, fed by the same source, develop with the expansion of the bronchial arteries themselves. Large intercoronary collaterals appear only after interruption of the continuity of a major coronary artery.

The collateral circulation is usually well developed at five months after cardiopneumonopexy but may occasionally be extensive within three months, even in the absence of "need" on the part of the myocardium. A collateral circulation is probably responsible for maintaining the patency of a coronary artery beyond a point of ligature but does not necessarily prevent infarction when a major coronary artery is ligated within the first month after cardiopneumonopexy. Further data regarding the degree of protection to the myocardium are needed. Controlled functional studies in dogs have demonstrated that blood reaches the coronary circulation from these collaterals at least during a part of the cardiac cycle, even in the absence of anoxia of the myocardium. It remains to be investigated whether cardiopneumonopexy, employing a relatively small mass of lung tissue with an expanded bronchial circulation, may be useful in the treatment of coronary insufficiency in man. Simple cardiopneumonopexy appears to be indicated in the treatment of transposition of the great vessels, especially in those instances in which the pressure in the pulmonary artery exceeds the systemic arterial pressure.

Fat Embolism: The Prophylactic Value of a Tourniquet. L. P. Peltier. J. Bone & Joint Surg. 38-A:835-840 (July) 1956 [Boston].

The well-known causes of death following fractures and operations on the skeleton are being controlled by steady improvement in the management of shock, hemorrhage, and infection, with the result that hitherto less-known causes of death are now assuming greater importance. One of these is fat embolism. About 20% of all fatalities following fractures are said to be due to fat embolism. Since no effective method of treating this condition has been found, every effort should be directed toward lessening the degree of fat embolism that regularly accompanies injury to the skeleton. Reiner, in 1907, observed the prophylactic value of a tourniquet. Von Aberle advocated the use of an Esmarch tourniquet, and Buerger urged that it be applied to patients with multiple fractures to prevent the entrance of the fat into the general circulation. Ryerson too concluded that the

use of a tourniquet was the best method of preventing fat embolism. As a result of a method of detecting fat droplets in the circulating blood, it has been possible to make a study of fat embolism in 100 patients undergoing elective orthopedic surgery. The results of this study have been correlated with those obtained in experiments on animals. By these investigations it has been demonstrated that (1) fat embolism is more frequently associated with operations on bone than with operations on the soft tissues; (2) the use of a tourniquet in an operation on bone effectively sequesters fat in the extremity and prevents fat droplets from reaching the systemic circulation; and (3) compression of the soft tissues by a tourniquet produces a minor degree of fat embolism. A tourniquet should be used whenever possible in operative procedures involving trauma to bone because of its value in minimizing fat embolism. It is surprising that the knowledge of the prophylactic value of a tourniquet in bone operations has not been widely disseminated.

The Use of Chloramphenicol Succinate in Surgery. G. Guagliano and G. Bianchi. Minerva chir. 11:502-508 (June 15) 1956 (In Italian) [Turin, Italy].

The parenteral administration of chloramphenicol is now possible because of the recent discovery by Italian chemists of a chloramphenicol succinate: a white, crystalline, and readily soluble powder. Its chemical formula is D-threo-1-p-nitrophenyl-2-dichloroacetamido-3-succinaxy-1-propanol. The authors studied the effects of this antibiotic in patients undergoing surgical treatment. The effects of the drug were evaluated from two points of view: clinical, by considering the time needed for complete termination of fever; and bacteriological, by considering the time required for the pathological effusions to become sterile. In a period of two years the drug was given to more than 500 patients with inflammatory lesions of bones or joints, compound fractures, and peritonitis due to acute appendicitis or to other causes. The injections were given very slowly, were repeated daily, and were continued until the disappearance of the infection. Inflammatory lesions were completely sterile after 48 hours. There were no cases of intolerance or intoxication. Injection of the drug into the peritoneal cavity was not followed by local or general reaction. The drug had a greater effect on severe inflammatory lesions when it was injected locally or directly into the artery. In a few rare cases the germs resisted the effects of the drug.

Homogeneous Statistics of 38 Cases of Chronic Relapsing Pancreatitis Operated on in 1952 and 1953. P. Mallet-Guy, J. Feroldi and R. Vidil. Lyon chir. 51:531-556 (July) 1956 (In French) [Paris, France].

The results obtained by the authors in chronic relapsing pancreatitis do not support the pessimistic views held by some of those who are concerned with this problem. Progress should be made not by discarding the accomplishments of the past but by using them as a basis for future achievement. The effectiveness of several of the surgical procedures now in use is clearly shown by the statistics on 38 patients with this condition who were operated on during 1952 and 1953. Only cases in which the diagnosis was established by a typical clinical course, the discovery of indisputably inflammatory lesions, and a confirmatory biopsy were included. The operation to be performed should be chosen on the basis of a methodical survey of each patient, including biopsy of the pancreas and manometric and radiological studies of the biliary passages. A left pancreatectomy, which was used successfully in one case, is indicated when the lesions are strictly localized on the left side of the pancreas. A left splanchnicectomy, which should be used in cases in which the conditions for pancreatectomy are not met and there is no demonstrable dystonia of the sphincter of Oddi, was carried out in 23 cases, either alone (15) or in combination with external biliary drainage (2) or biliary anastomosis (6). Biliary anastomosis is not a treatment for pancreatitis. Manometric and radiological evidence of choledochal compression suggested its use in eight cases, but in two the rapidly fatal course of the disease prevented its execution. Dystonia of the sphincter of Oddi was present in 12 patients, 11 of whom had hypotonia and were treated by a right splanchnicectomy. The 12th patient, who had hypertonia, was successfully treated by vagotomy. None of the patients in this series presented the necessary indications for sphincterotomy. No evidence was found to support the theory that the pancreatic lesions are the result of a narrowing of the duct of Wirsung.

There were three deaths and one patient was lost to follow-up, leaving 34 in whom evaluation of the late functional results was possible. The results were perfect from the outset in 26 patients and after a slight delay in 5; in the other 3 they were good, but although pain was relieved certain functional disturbances persisted. There were no late failures. These statistics show that chronic relapsing pancreatitis can usually be treated effectively and that left splanchnicectomy not only has wide applicability to patients with this condition but may even be regarded as curative because it arrests the progress of the lesions.

NEUROLOGY & PSYCHIATRY

Infantile Hemiplegia and Hemispherectomy. J. Achslogh, F. Sody-Farber and P. Van Reeth. Acta paediat. belg. 10:53-68 (No. 2) 1956 (In French) [Brussels, Belgium].

The term hemispherectomy is expressive but inexact, because the procedure to which it refers is actually a hemidecortication that respects the central gray nuclei. The first series of patients in whom hemispherectomy was performed for epilepsy with infantile hemiplegia and personality disturbances was reported in 1950 by Krynauw. Similar reports have since been published by other workers, and the number of patients treated by this procedure must now exceed 100. Infantile hemiplegia may begin at birth, usually as the result of an obstetric accident, or it may appear during the first four years of life as a sequel to an inflammatory or vascular disease of the central nervous system, accompanied or not by convulsions and usually febrile. It may appear abruptly without premonitory symptoms or fever. The chronic stage is marked by the symptomatic triad of hemiplegia, epilepsy, and personality disturbances. The anatomic lesions, which include atrophy of the white matter and the gray matter in the hemisphere on the side opposite the hemiplegia, vary widely in extent and in intensity. The hemiplegia is spastic and more pronounced in the arm, which is held in flexion with the fist closed. Walking is usually possible, though irregular and accompanied by claudication. Sensitivity to touch and pain are for the most part preserved but diminished; deep sensitivity, on the other hand, is profoundly disturbed. Hemianopsia is sometimes present. Speech is preserved, though it may be below that of a normal child of the same age if the dominant side is affected. The mental state varies from nearly normal to severely deficient. Personality disturbances, which are almost always present, are often so pronounced that the child must be placed in a psychiatric institution. Epilepsy, when present, may be either focal, with one or more foci, or generalized; occasionally, however, it is absent. The best indications for hemispherectomy are found in patients with spastic hemiplegia, focal epilepsy, and personality disturbances, but the operation may be performed on patients in whom either epilepsy or personality disturbances are lacking. Each patient should be carefully evaluated, and the operation should not be undertaken without the assurance that the hemisphere to be retained is functionally normal.

The operative technique preferred by the authors is that described by Achdogh and Ectors; it consists of a rigorous decortication with complete preservation of the central gray nuclei. The effect of the operation on the sensory disturbances is slight. Aphasia never appears, but hemianopsia is complete and definitive, although the central vision is not affected and the patient is usually unaware of the defect. The major result of the operation is unquestionably the disappearance of epilepsy in almost all cases. This disappearance is accompanied by a significant reduction in the aggressiveness often dominant in these patients. The beneficial effect of hemispherectomy may be illustrated by the case of a 10-year-old girl who had had a right-sided infantile hemiplegia from the age of 13 months on, which was accompanied by epilepsy, slight aggressiveness, and moderate mental deficiency. A left hemispherectomy was followed by the complete disappearance of the epilepsy; the hemiplegia became less spastic; the aggressiveness diminished;

and there was even a slight mental improvement. The neurophysiological problems connected with the mechanism by which these effects are secured are still unresolved, but they may well lead to a revision of opinions previously held. Hemispherectomy or hemidecortication is certain to become the operation of choice in the treatment of infantile hemiplegia.

Lithium Therapy in Mania: Practical Lines of Guidance. M. Schou. Nord. med. 55:790-794 (June 17) 1956 (In Danish) [Stockholm, Sweden].

In 69 out of 85 manic patients treated with lithium to date the manic symptoms disappeared or abated during the treatment; in 16 patients the treatment was without effect. Spontaneous variations are characteristic of manic-depressive psychoses, but in one-third of the cases the improvement is attributed to the lithium. Every psychosis with definitely manic features is an indication for treatment with lithium, but since the effect sets in rather slowly in the course of one or two weeks, it is often preferable in first-time mania and in patients with infrequent brief manias to await spontaneous improvement or to use electroshock. The treatment seems to be without effect in endogenous depressions. In conditions where serpasil and chlorpromazine are of undoubted therapeutic value the effect of lithium is slight or uncertain, but its effect in especially protracted or frequently recurring manias offers advantages over other forms of treatment. A tablet contains 0.3 gm. of lithium carbonate. A beginning dosage of 2 tablets two or three times daily is advised. After one or two weeks treatment can usually be continued with a maintenance dose of 1 tablet three times daily, the final dose being determined by the effect on the psychic condition, the lithium concentration in the blood, and possible symptoms of overdosage (nausea, diarrhea, strong tremor of the hands). A reasonable intake of salt must be insured, and the water intake must be adequate. Therapy with the substance should be discontinued if the salt or water intake fails during the treatment. During the treatment determination of the lithium concentration in the blood every two weeks is sufficient; flame photometric determination is simple and quick. Diseases of the heart and kidneys and conditions leading to low salt intake are contraindications. No late effects have been observed on administration for over three years.

GYNECOLOGY & OBSTETRICS

Torsion of the Human Pregnant Uterus. R. E. L. Nesbitt Jr. and G. W. Corner Jr. Obst. & Gynec. Surv. 11:311-332 (June) 1956 [Baltimore].

A 32-year-old Negro woman was hospitalized because of right lower quadrant pain associated with a right lower quadrant mass and amenorrhea of 11 weeks. Her history revealed two fleeting episodes of stabbing right lower quadrant pain two weeks prior to admission followed by constant "drawing" right lower quadrant discomfort. On pelvic examination the uterus appeared to be in the midline and felt a little large for the duration of the amenorrhea. There was a hard, nontender, 3-to-4-cm. mass, which was inseparable from the uterine wall and which arose deep in the pelvis and reached almost to the umbilicus. Examination under anesthesia demonstrated a 4-cm. globular mass apparently in the right lateral uterine wall and a 6-cm. globular mass apparently attached to the right cornu of the uterus. These findings suggested either a right interstitial pregnancy or a degenerating myoma at the right cornu. Upon the opening of the abdomen through a lower midline incision, an obviously pregnant uterus of at least 11 weeks' size and slightly more cyanotic than usual was encountered. A bilobed subserous myoma was found in the right lower quadrant at the left cornu of the uterus. The 180-degree torsion of the uterus upon the cervix was corrected manually, whereupon the increased cyanosis of the uterus disappeared. The woman made nine subsequent prenatal visits and was asymptomatic. During labor, which occurred at the 38th week of gestation, the uterus was noted to be in 90-degree torsion. However, this torsion did not interefere with the labor. During her hospital stay, the uterus remained in normal position. The patient has had a subsequent uneventful pregnancy.

Reviewing the literature on torsion of the pregnant uterus, the authors found that this relatively rare accident of pregnancy has now been reported 107 times. In 30% of the women torsion occurred in association with myomata uteri and in 15% with uterine anomalies. Ovarian cysts, adhesions, uterine suspensions, abnormal fetal presentations, fetal anomalies, and abnormalities of the spine and pelvis are also reported to be etiological factors in torsion of the pregnant uterus. The diagnosis of torsion of the uterus is seldom definitely established prior to laparotomy. The treatment of symptomatic torsion of the pregnant uterus is immediate laparotomy and detorsion. Contrary to the opinion commonly expressed, cesarean section with or without hysterectomy may not be necessary except in the most advanced degrees of torsion. When the accident occurs near term or during labor, cesarean section may be the procedure of choice. However, simple detorsion together with surgical removal of the causal abnormality seems sufficient in many cases, especially in the earlier months of pregnancy. Prompt surgical intervention coupled with adequate blood replacement and chemotherapy has resulted in a reduction in maternal mortality in recent years, but torsion of the pregnant uterus after the fifth month of gestation is still accompanied by considerable maternal risk.

The Use of the Routine Vaginal Smear as a Screening Test for Uterine Carcinoma. J. H. McClure, W. L. Caton and G. Luechese. J. M. A. Georgia 45:305-308 (July) 1956 [Atlanta, Ga.].

The investigations described were carried out in order to determine more accurately the prevalence of uterine carcinoma in patients seen on the gynecologic service of Emory University at Grady Memorial Hospital, Atlanta, Ga., and to compare the "routine" vaginal smear method of screening for carcinoma of the uterus with the method of "biopsy on clinical suspicion." The population group seen on this service is predominately indigent urban Negro. A total of 670 patients was seen during the one-month period. Of these patients, 452 were Negro and 218 white. Forty of the 670 smears were interpreted as malignant. During the period covered by this study, 84 patients had a four-quadrant cervical forceps-biopsy done because of "clinical suspicion." Ten of these 84 biopsies were positive (five invasive carcinomas of the cervix and five in situ carcinomas of the cervix). The smears of 9 of these 10 patients had previously been interpreted as malignant. An attempt was made to obtain follow-up examinations on the remaining 31 patients.

Schiller tests and four quadrant cervical biopsies were obtained in 27 of the 31. A total of 18 of the 670 patients were found to have cervical carcinoma, and in eight of these the diagnosis was made solely because of the routine cervical smear test. Seven had invasive and 11 had in situ carcinoma. Five of the six patients with clinically unsuspected in situ carcinoma of the cervix were under 26 years of age. Only one of the six patients with unsuspected in situ carcinoma of the cervix had a positive Schiller test.

PEDIATRICS

Hemolytic Disease of Newborn Infants Due to ABO Incompatibility: Twelve Cases Treated by Exchange Blood Transfusion. O. Mellone, D. Delascio, P. Refinetti and others. Rev. paulista med. 48:266-278 (March) 1956 (In Portuguese) [São Paulo, Brazil].

Twelve newborn infants with hemolytic disease due to ABO incompatibility were observed. The blood groups of mothers and infants were as follows: type O, Rh positive in 10 women and type A, Rh positive in their infants; type O, Rh negative in a woman and type A, Rh positive in her infant; and type B, Rh negative in another woman and type AB, Rh negative in her infant. Two women were primiparas who had not previously had blood transfusions, but one of them had had an injection of anti-Arachnidia serum at an early period of pregnancy. Five women had previously had one or more infants with jaundice and anemia immediately after birth for which the infants received blood transfusions. The five infants got well, three without sequels and two with neurological sequels. The remaining five women had previously had either normal infants or still-born

fetuses. The symptoms followed the pattern that differentiates ABO incompatibility from Rh incompatibility: Severe jaundice and anemia appeared immediately after birth or within the first 12 hours of the infant's life, with or without erythroblastemia and splenohepatomegaly. The course of the acute forms is the same as that of the disease caused by Rh incompatibility, associated with acute hemolysis. The acute symptoms consist of rapid aggravation of the patient's condition, with changes in temperature, disorders of respiration, and neurological symptoms and coma from kernicterus.

The treatment consisted of exchange blood transfusion, given intraumbilically in 10 cases and by the radial artery in 2. An average dose of 800 cc. of erythrocytes in saline solution was given. Immediate results were excellent for the nine patients who had the treatment within the first two days of the disease. All the patients recovered without sequels. Of the remaining three patients, one died from complications of umbilical hematoma. Two patients had the treatment starting on the fourth and fifth days, respectively, in the course of kernicterus. One patient died and the other recovered with neurological sequels. The nine patients who recovered without sequels have been observed for nearly two years. They are normal.

Hemorrhagic Adrenal Glands in the Newborn. P. Salomone. Minerva pediat. 8:675-687 (May 5) 1956 (In Italian) [Turin, Italy].

The author reports on 12 cases of acute adrenal hemorrhage in newborn babies. The most frequent cause of adrenal hemorrhage is difficult delivery in combination with one or more other causes, e. g., asphyxia, conditions that required intervention with forceps, and pathological pregnancy. None of the babies was born after a completely physiological pregnancy or delivery. Some factor that had caused the hemorrhage was present in each baby. Hemorrhage could also be considered as the result of nonadaptation of the baby to the stress of the birth. In almost all cases hemorrhage was present, not only in the adrenal gland but also in some other part of the body: the lungs, the intracranial organs, the digestive system, the spleen, the thymus, the liver, or the testes. The lungs were involved 8 times in 12 cases; in some cases with hemorrhage, in others with pneumonia or atelectasis. Male babies were affected more than female babies.

A Clinical Contribution to the Study of Congenital and Acquired Toxoplasmosis. A. Gentili. Riv. clin. pediat. 57:197-211 (Feb.) 1956 (In Italian) [Florence, Italy].

The author describes a case of congenital toxoplasmosis and one of acquired toxoplasmosis. The first patient presented all of the classic symptoms of the disease: chorioretinitis, intracranial calcifications, and hydrocephaly. The mother of the patient showed no symptoms of toxoplasmosis, but the author thinks that it is possible for an individual to have toxoplasmic infection without the manifestation of symptoms. The patient, who is now 6 years old, has been under observation since she was 7 months old. Treatment with sulfonamides stopped the evolution of the symptoms: the ocular lesions regressed and the hydrocephalic syndrome became stabilized. With the exception of chorioretinitis, the child is today in good physical and psychological condition. The child has never exhibited convulsive phenomena, and neurological examination has always been negative.

The patient with acquired toxoplasmosis contracted the disease at 9 years of age. Chorioretinitis was the only classic symptom present. Hemorrhages were absent. The course of the disease was afebrile. Serological examinations were made on the father, mother, and younger sister of the patient, none of whom exhibited any clinical manifestations. These examinations revealed the presence of antibodies. The author thinks this was due to an infection, without symptoms, that the whole family had contracted.

Early Diagnosis of Bone and Joint Tuberculosis in Children. T. J. Mills, R. Owen and E. H. Strach. Lancet 2:57-59 (July 14) 1956 [London, England].

The authors review observations on 60 patients in whom biopsy was performed to differentiate tuberculous from nontuberculous lesions of the bones and joints. Patients in whom the diagnosis was sufficiently obvious to preclude the need for biopsy were excluded. The following types of biopsy were carried out: aspiration of either a joint cavity or an abscess in 26 patients; biopsy of regional lymph nodes in 39 patients; joint biopsy of the synovial membrane in 31 patients; and bone biopsy in 11 patients. The patients were divided into three groups: in the first group of 35 patients tuberculosis was proved; in the second group of 20 patients the lesions were nontuberculous; and in the five remaining patients (third group) the lesion were not identified. In the first group biopsy established the diagnosis of tuberculosis beyond reasonable doubt in that the bacillus was isolated in 21 patients or the histology was typical of tuberculosis in 32 patients. In the second group the nontuberculous nature of the lesion was demonstrated by biopsy and the subsequent clinical course.

The decreasing incidence of tuberculosis at present underlines rather than diminishes the necessity for early biopsies. By following a policy of early biopsy the tuberculous or nontuberculous nature of the condition can be established promptly with a view to effective treatment. The authors feel that their mistakes have been mostly due to inadequate examination. They emphasize the fact that in all biopsies the material obtained must be submitted to histological examination, culture, and guinea pig inoculation.

Observations on Leprosy Among Children Born in the Culion Leper Colony During the Presulphone and the Sulphone Periods. C. B. Lara and J. L. Ignacio, J. Philippine M. A. 32:189-197 (April) 1956 [Manila, Philippine Islands].

This study was prompted by a suspicion that there has been some insidious change in the prevalence and character of leprosy among children during recently years at the Culion Leper Colony. The authors compared the incidence of leprosy among the children born in the colony in two eight-year periods. While at first glance the comparison between the period of chaulmoogra therapy (1933 to 1940) and the period of sulfone therapy (1947 to 1954) shows no appreciable difference in the incidence of leprosy among colony children, a more detailed analysis reveals a probable lower rate of incidence during the sulfone period. An increased average "age at onset" for all types of lesions, as well as a relative increase in the later developing types, especially the macules, supports this view. Whether the lower rate was actual or merely a manifestation of a lag in the incubation period, and whether it was influenced by the fairly widespread, nonintensive use of the sulfones or some other cause cannot be determined.

Hyperthyroidism in Newborn Infant: Report of Case and Review of Literature. A. J. Aballi, N. Casanova, A. Pacheco and Frank Lavernia. Rev. cubana pediat. 25:339-350 (June) 1956 (In Spanish) [Havana, Cuba].

Children born to women with hyperthyroidism, as a rule, do not suffer from the disease. The case reported by the author is the 14th in the literature. The mothers reported on in the literature had thyroid disorders during pregnancy. Ten mothers with active thyrotoxicosis had been treated with iodine or thiouracil during pregnancy, and four had undergone a thyroidectomy that resulted in hypothyroidism in one patient. The infants were boys, and all were slightly premature. The period at which hyperthyroidism appeared was variable. A diagnosis of hyperthyroidism was made in one infant during the mother's pregnancy because of the marked tachycardia perceptible in the fetal heart. In the remaining cases the diagnosis was made immediately after birth or within the first and fifth weeks of life of the infant. The symptoms were those of marked irritability, tachycardia, enlarged thyroid, and marked exophthalmos. Ossification was slightly accelerated. The electrocardiograms showed changes characteristic for hyperthyroidism for that age. The main complications were cardiac insufficiency, bronchopneumonia, and liver disease. However, the complications were rare and controllable, and the disease manifested a tendency toward spontaneous and rapid regression without treatment. The mother of the patient reported on had hyperthyroidism for which she received treatment beginning in the third month of pregancy and continuing with interruptions through the following months. The treatment consisted of administration of Tapazole (imidazole derivative) and Lugol's

solution (iodine). The infant was normal at birth but showed marked symptoms of hyperthyroidism within the first week of life. It recovered within a few weeks without any specific treatment.

Acute Fetal Ichthyosis: Case with Survival of Infant for More Than One Year. H. Garces and F. Donoso. Rev. Chilena Pediat. 27:158-162 (April) 1956 (In Spanish) [Santiago, Chile].

Acute fetal ichthyosis consists of diffuse hyperkeratosis and cornification of the epidermis, the other layers of the skin being normal. The epidermal abnormality results in the formation of thick horny scales and red sulci on the skin from head to foot. The disease is rare. The cases reported in the literature have been observed in premature infants, mostly from parents who were interrelated. The etiology is not known. It is believed to be hereditary. Death occurs in almost all cases within the first few hours after birth. The case reported by the author is the fourth published in the literature of Chile. The parents were not related. The mother had previously had three normal children. The lesions in the infant girl were typical of the severe acute form of ichthyosis. She had neither hair nor eyebrows. There were skin abnormalities about the mouth, the nose, and the eyes. She was treated with antibiotics (terramycin, 30 mg. per kilogram of body weight daily), cortisone (37 mg. daily), and vitamin A (20,000 units daily) for one month, and care of the skin with medicated petrolatum. At the end of one month, treatment with antibiotics and cortisone was terminated and only treatment with vitamins A, C, and D and care of the skin was continued. Recurrent respiratory infections were frequent complications. The infant was cared for in the hospital for five months. She lived for more than one year. It is possible that cortisone had some effect on the patient's survival by increasing her strength. The drug had no effect on the skin lesions. The abnormal epidermal layer was detached from the infant's body once, only to be replaced by another layer with the same abnormal characteristics.

Semiologic Considerations on Myasthenia Gravis: Report of Case. E. O. Lis and A. Giancia. Arch. oftalm. Buenos Aires. 31:145-148 (May) 1956 (In Spanish) [Buenos Aires, Argentina].

Myasthenia gravis is rare in children. The subject of this report, a child 7 years old, suffered from frequent episodes of respiratory infections of an asthmatic type after which his ability to move was greatly diminished. Motor incapacity lasted for about 10 days after vaccination and again after an attack of parotitis. His gait was unnatural, as if he had no strength in his legs. At the age of 7 he developed a pronounced exophthalmos and limitation of the eye movements. He also exhibited tremor of the hands, great asthenia, dysphagia, difficulty in voiding and in defecating, and lastly palpebral ptosis appeared. The electrocardiogram showed changes suggestive of neurocirculatory asthenia. The prostigmine test gave positive results, and treatment with prostigmine controlled the acute symptoms.

Genuine Cirrhosis of Liver in Infants. K. Lambers and H. Richter. Ztschr. Kinderh. 78:60-70 (No. 1) 1956 (In German) [Berlin, Germany].

Cirrhosis of the liver is rare in infants less than 3 months old, but when it occurs, macroscopic and microscopic studies on the liver of these infants suggest that the condition is usually one of the following three: interstitial syphilitic hepatitis of the newborn, cholestatic cirrhosis in the presence of congenital atresia of the bile duct, or a manifestation of hemolytic disease of the newborn. Since the occurrence of hepatic cirrhosis in hemolytic disease of the newborn was not recognized until 1934, it is assumed that the majority of familial, etiologically obscure cases of hepatic cirrhosis in infants before that time were caused by hemolytic disease of the newborn. In addition to the three forms of cirrhosis mentioned, there occur in young infants (often in several in one family) hepatic lesions characterized by intra-acinar cirrhosis. Although this process is histologically similar to the hepatic cirrhosis resulting from Rh incompatibility, a definite relationship to hemolytic disease of the newborn cannot be demonstrated.

The authors report observations on an 8-week-old infant with hepatic cirrhosis. Another infant in this family had died six years previously (12 days after birth) with signs of severe jaundice. The symptoms were similar in the two children, except that in the first the course was somewhat more fulminant and the jaundice more severe. In the second infant the liver was enlarged and was of the hobnail type. Hyperglycemia, glycosuria, and galactosuria existed throughout the course of the disease. The disorder of the first infant was diagnosed as hepatic jaundice with enlargement of the liver, whereas the second case was identified as infantile cirrhosis of the liver. Histological examination revealed in the first child diffuse fatty degeneration of the liver with inflammatory infiltration of the interstitial cells, that is, the pathological process was relatively recent; whereas in the second child the liver showed a characteristic, diffuse intra-acinar cirrhosis. It is possible that the primary cause was the same in both infants and that cirrhosis developed in the second infant because of the more prolonged clinical course. The authors found seven similar cases reported in the literature. They suggest that these are cases of genuine cirrhosis of the liver that should be differentiated from the above-mentioned forms in which the causation is established.

UROLOGY

A Clinical Study of the Motor Paralytic Bladder in Poliomyelitis. B. G. Clarke. J. Urol. 76:66-69 (July) 1956 [Baltimore].

In spite of the relative frequency of urinary retention in patients with poliomyelitis there is little material in the literature on which to base an understanding of the physiological disturbances that occur. In 13 patients, bladder paralysis appeared concurrently with peripheral skeletal muscle paralysis during the acute, febrile stage of poliomyelitis. Distribution of peripheral paralysis had no relation to segmental location of bladder motor innervation. Among the adults capable of describing sensation, micturitional disturbances assumed the form of painful urinary retention. Large volumes of residual urine were obtained. Ileus of varying degrees of severity developed concurrently with difficulty in voiding. In two patients who died, no histological abnormality of the muscle, nerves, or ganglia of the bladder wall could be found. Paralysis of the abdominal striated muscles was present in only half of the patients. The authors find indications that the urinary retention of poliomyelitis is the result of detrusor weakness without sensory loss. It may simply reflect motoneuron changes, usually reversible, in the lateral columns of the sacral segments of the spinal cord, from which originate the parasympathetic motor nerves of the bladder. In surviving patients, normal bladder function returned during defervescence and beginning recovery from skeletal muscle paralysis. In the younger patients, simple measures such as manual expression of the bladder, administration of parasympathomimetic drugs, or one or two catheterizations sufficed for treatment. In the adults, indwelling catheter drainage during the phase of bladder paralysis was used successfully until return of normal bladder function.

Longevity Following Nephrectomy. A. E. Goldstein. J. Urol. 76:31-41 (July) 1956 [Baltimore].

The author reports a study in detail of the outcome of 391 cases of patients who underwent nephrectomy from 1918 to 1954 inclusive. The average life span after operation for renal tuberculosis was slightly more than 13 years in patients living until 1955, whereas in those who died before 1955, it had been only 2.7 years. The average length of life after nephrectomy for neoplasm among patients living in 1955 was 4.7 years, while among those who died prior to 1955 the survival was approximately 4.1 years. A nephrectomized patient can live a normal life, and there will be no interference with longevity except in those in whom nephrectomy was performed because of tuberculosis or neoplasm. In this study, patients who underwent nephrectomy for neither of those conditions and who were living in 1955 were healthy and had lived an average of 10.1 years since operation. Of the 122 traced patients subjected to nephrectomy after 50 years of age, 66% have already lived their average span of life of 65, and many more have gone beyond the average span of life. Patients undergoing nephrectomy can reach the average span of life of 65 years provided the op-

posite kidney is in good condition at the time of operation. The author hopes that nephrectomy can be avoided in some cases with the aid of newer drugs. Experience and judgment will help in the conservation of renal tissue with a view to increasing the survival rate. Although nephrectomized patients who did not have renal tuberculosis or neoplasm are no greater risks than other people, they are given higher insurance rates because insurance companies confuse these surgical diseases with the various types of nephritides, which certainly create poorer risks.

Present-Day Concepts of Polycystic Renal Disease: Analytic Studies of 67 Cases. P. Vallery-Radot, P. Milliez, C. Laroche and others. Semaine hôp. Paris **92**:2232-2237 (June 30) 1956 (In French) [Paris, France].

Polycystic renal disease may be present for a long time without causing much discomfort. It is usually isolated and may be hard to detect. Death occurs as a rule about 10 years after appearance of the first serious functional symptoms and is usually due to severe renal insufficiency. Arterial hypertension is present in three-fourths of the cases, but death is rarely linked to a cerebral or coronary vascular accident. The first symptoms are variable and may consist of vague lumbar or abdominal pains, severe nephritic pains, hematuria with or without pain, albuminuria not associated with another disease, pyuria, arterial hypertension, or azotemia revealed by great debility and excessive thirst. In two-thirds of the 67 patients in the present series, the first symptoms were lumbar pain, hematuria, and arterial hypertension. The patients ranged in age from 9 to 70 years and were almost equally divided as to sex (33 men). In most of the patients the kidneys were abnormally palpable. Bacillus coli was the organism most commonly found in the urine of patients with pyuria, but enterococci, staphylococci (micrococci), and streptococci were also present in some cases. The diagnosis of polycystic renal disease was confirmed by palpation in 21 cases and by radiology in 41. The pathogenesis of polycystic renal diseases was not clarified by observations in these cases.

Primary Tumors in Ureter and Renal Pelvis with Analysis of 12 Cases. F. Lund and F. Lundwall. Ugesk. læger **118**:615-621 (June 7) 1956 (In Danish) [Copenhagen, Denmark].

From 1939 to 1954, papillomas or carcinomas in the ureter or renal pelvis were diagnosed in 12 patients, 11 men and one woman, aged from 44 to 74. Medical aid was sought because of hematuria, often sparse and intermittent. In 10 cases the diagnosis was made preoperatively by intravenous urography, direct pyelography, or retrograde pyelography. The authors' investigations show epithelial tumors in the upper urinary tract, whether histologically benign or malignant, to be particularly malignant in their clinical course, with a marked tendency to metastasize to the lower part of the urinary tract. On diagnosis, nephroureterectomy with partial cystectomy must be done, provided the other kidney functions satisfactorily. In five patients operated on radically there has been no recurrence during observation for from 1 to 11 years. The danger of superfluous operation is compensated for by the favorable results of the more radical operation. The aim must be to find a more refined and certain method of establishing these tumors preoperatively and to sharpen attention to the presence of tumors in ureter and renal pelvis in patients with hematuria of unknown cause or with papillomas of the bladder, especially multiple papillomas centered around the ureter ostia.

Conservative Treatment of Acute Grave Renal Insufficiency: Review. P. Anthonisen, C. Brun and C. Crone. Ugesk. læger **118**: 647-653 (June 14) 1956 (In Danish) [Copenhagen, Denmark].

From August, 1954, to March, 1956, 73 patients with acute anuria were treated in the Kommunehospital in Copenhagen. The anuria was due to obstruction in the urinary tract in 10 patients and to an acute flare-up of chronic renal disease in 5. The remaining 58 had acute ischemic anuria, most often from shock or complicating operations or severe barbiturate intoxication. In 26 cases hemodialysis had to be resorted to; 4 of the other 32 patients died within 24 hours, and 16 of the 28 given conservative treatment exclusively survived. The purpose of conservative treatment of acute renal insufficiency is maintenance of the organism's internal milieu under conditions in which the water and electrolyte elimination is gravely compromised or has stopped and in which the elimination of residual products from the protein metabolism is almost suspended. The patient with anuria is almost always in a state of excessive catabolism. At least 100 gm. of glucose are to be given daily, and as soon as possible, i.e., when the renal function rises to somewhat more than 5%, protein substances should be given for building up the organism's tissue. Water is to be supplied in such amounts that there will be a daily loss of weight of about 0.5 kg. The amount of electrolytes supplied corresponds to what is lost through vomiting and diarrhea. Blood transfusions because of threatening or manifest shock must be given with extreme care. Acute hyperkalemia can be temporarily combatted by infusion of glucose with insulin, together with injection of calcium salts. Prophylaxis against infection is of the greatest importance. The clinical symptoms accompanying acute renal insufficiency depend more on disturbances in the water and electrolyte relations than on the accumulation of metabolic products containing nitrogen. If the blood urea level tends to rise above about 400 mg. per 100 cc. the treatment must be supplemented by hemodialysis, but the fact that conservative treatment is the basic principle of treatment for all patients with acute anuria is stressed.

Experiences with Hemodialysis: Thirty-Four Consecutive Patients. P. Anthonisen, C. Brun, C. Crone, and others. Ugesk. læger **118**:653-669 (June 14) 1956 (In Danish) [Copenhagen, Denmark].

In the 18-month period ending in March, 1956, a total of 34 patients were treated with 55 dialyses in the Kommunehospital in Copenhagen. Dialysis was done in 26 patients because of uremia threatening life or hyperkalemia in connection with acute ischemic anuria; only one survived of the 14 most gravely affected, in whom the picture was dominated by the primary disease as well as by the uremia. Six of the 12 who also had acute anuria and grave uremia but in whom the primary affection had receded survived. In the remaining eight patients with uremia or intoxications from various substances the immediate results of dialysis were good. In the most severe cases even the most energetic conservative treatment will not avail and hemodialysis is necessary. The contraindications are few and relative, since the patients concerned are patients who without dialysis have a highly unfavorable prognosis. Persistent or more recent internal bleeding is a relative contraindication. Dialysis treatment cannot be separated from the conservative therapy. The artificial kidney can be used only by a trained and experienced personnel, and both forms of treatment are best applied in clinical centers.

OPHTHALMOLOGY

Toxoplasmic Uveitis: Treatment with Pyrimethamine and Sulfadiazine. C. J. Burnham and V. A. Beuerman. Am. J. Ophth. **42**: 217-227 (Aug.) 1956 [Chicago].

Seven male and two female patients between the ages of 12 and 27 years with active uveitis were treated with pyrimethamine (Daraprim) and sulfadiazine. All patients had a positive reaction to toxoplasmin skin tests. Treatment was started with doses of 25 mg. of pyrimethamine two, three, or four times daily and with doses of 0.5 gm. of sulfadiazine two or four times daily. These doses were reduced gradually. Most of the patients were hospitalized for treatment. The duration of the treatment ranged from 1 to 10 months. Some of the patients are still receiving treatment. Four patients showed marked improvement within a week, which continued to quiescence of their lesions. Four of the patients showed improvement varying from slight to marked over a longer period of time. One patient showed no response to therapy and in retrospect should probably not have been included in the group; although he had a positive reaction to the toxoplasmin skin test, the patient's father had died of tuberculosis, and the patient's disease was confined to the anterior segment (iridocyclitis). All the patients were carefully watched for toxic reactions to the drugs. Depression of the morphological elements of the blood did not occur in any of the patieats. One patient had urticaria, which was presumably

caused by the drugs; it was controlled by antihistaminics, allowing continuation of the therapy. The only other complications were slight anorexia and nausea.

Although the toxoplasmic causation of chorioretinitis in adults has been proved, the available diagnostic methods are fallible and in most cases the diagnosis of toxoplasmic chorioretinitis must be presumptive at best. The average ophthalmologist, not associated with a research facility, does not have available repeated serial Sabin dye tests; the combination of careful history and examination of the patient, a thorough attempt to rule out other granulomas as causative, and in addition a positive reaction to the toxoplasmin skin test is probably his best approach to making a presumptive diagnosis of toxoplasmic chorioretinitis. The decision to treat or not to treat a patient with presumptive toxoplasmosis should be made by the individual ophthalmologist and should probably be based partly on the severity of the patient's condition. It should not be begun without adequate supervision in regard to possible toxic effects from these drugs. Although there were no severe reactions to pyrimethamine and sulfadiazine in the small group of patients reported on by the authors, toxic reactions, including temporary but severe depression of the hematopoietic system, have been reported.

Epidemic Keratoconjunctivitis: Description of an Outbreak in an Institution for the Aged. J. Schneider, A. Kornzweig and M. Feldstein. Am. J. Ophth. 42:266-269 (Aug.) 1956 [Chicago].

An outbreak of epidemic keratoconjunctivitis in one of the units of the Home for the Aged and Infirm Hebrews of New York is described. It involved 16 men and women between the ages of 69 and 94 years. The clinical picture was characterized initially by a sense of irritation in the eyes, with redness and lacrimation. There was a varying degree of lid edema, chemosis, conjunctival redness, and redundancy with follicular hypertrophy. In three patients the discharge became serosanguineous, two patients had pseudomembranes with subsequent complete clearing, and one patient had true membrane formation with residual scarring of the fornices. The conjunctival phase of the disease lasted for from two to three weeks. The corneal lesions often started as diffuse, superficial, punctate staining lesions. Later round subepithelial infiltrates were observed in both the central and the peripheral cornea. Most corneal lesions cleared in about four to eight weeks. In six patients, however, corneal lesions were still present after 12 months. In most patients there was first involvement of one eye followed in a few days by symptoms in the other eye, probably related to the transfer of the infection from one eye to the other by the patients as they wiped their eyes despite repeated warnings. Special characteristics in this group were missing, except that the keratoconjunctivitis was uniformly acute, severe, and very disabling. The final vision in all patients returned to the acuity that was present before the infection.

The patients were strictly isolated and treated with 0.5% oxytetracycline (Terramycin) eye drops or 0.5% chloramphenicol (Chloromycetin) eye drops during the day, and oxytetracycline and chloramphenicol ointments were applied at bedtime. These antibiotics appeared to have no effect on the course or duration of the disease. Treatment is symptomatic and palliative. Preventive measures found useful are sterilization of tonometers by keeping the tonometer plunger in a solution of 1:5,000 benzalkonium chloride or by heat; the use of individual, boiled eyedroppers for each patient; preventing patients who are suspected of having the disease from touching arm rests, doorbells, and equipment in offices and clinics; and the surgical scrubbing of hands with a bactericidal detergent (Phisohex) by all who handle a patient suspected of having epidemic keratoconjunctivitis.

Mass Treatment of Trachoma in Nara Prefecture, Japan, 1951-1954. S. Kamiya. Am. J. Ophth. 42:269-283 (Aug.) 1956 [Chicago].

Lack of proper sanitation is the chief cause of trachoma in the Nara District in Japan, in which 6.8% of the total population belong to the lowest rank in the social order. These outcasts, most of whom have trachoma, live in isolated villages that are crowded and dirty. A four-year plan was instituted to wipe out trachoma. Between 1951 and 1954, 37 villages were chosen to test mass treatment of trachoma. A dispensary at the center of each village was open to all villagers for a period of one month. Although examinations were performed with the aid of a hand slit lamp, it was very difficult to make an exact diagnosis when the trachoma was still in its initial stages. Therefore, without exactly diagnosing trachoma, all persons who had chronic inflammatory signs of the conjunctiva were treated. An individual record card was prepared for each patient, with an evaluation of his clinical condition. Various conjunctival signs were graded by numbers. All patients were reexamined once a week and on the last day of the month; the numbers describing the conjunctival signs were recorded each time. Of 15,082 persons for whom record cards were made, 6,805 were between the ages of 1 and 15 years, 6,318 were between the ages of 16 and 54 years, and 1,959 were over 55 years of age. Of the 6,805 children, 5,129 were pupils in the primary and secondary schools; they were compelled by their schools to attend the dispensaries. Persons between the ages of 16 and 49 years had no time to attend the dispensaries regularly because of their daily work. Persons over 55 years of age did attend.

To most of the patients crystalline chlortetracycline (Aureomycin) ointment was administered once a day under the lower lid after the conjunctival sac had been washed out with 1% sodium chloride solution. The remaining patients were given oxytetracycline (Terramycin) and chloramphenicol ointment. Of 12,319 patients treated, 4,590 were cured. Three thousand seven hundred sixteen of the 12,319 patients had pretrachomatous conjunctival signs, i. e., slight redness near the inner and outer parts of the fornices, or some isolated follicles in the lower fornix; 2,744 of these 3,716 patients were cured by the treatment without having any residual traces of the disease, 937 remained unchanged, 26 became worse, and 9 were cured but left with traces of the disease. The remaining 8,603 of the 12,319 patients showed inflammatory conjunctival signs of various degree before the treatment. Some of them were cured by the treatment without residual traces of the disease, and some were cured but traces of the disease remained. The inflammatory signs of stage 2 of trachoma according to MacCallan's classification are more difficult to cure than the others. The highest incidence of trachoma stage 2 was observed in the patients between the ages of 16 and 54 years, so that it must have taken the disease 20 to 30 years to reach this stage. The traces that remained in patients who were treated for stage 2 lesions consisted merely of many fine lines. When patients with trachoma of stage 3 were cured, the traces of the disease that remained were still of a serious nature, and they appeared as irregular "islands."

Patients with pretrachomatous lesions, which are considered as stage 1 of trachoma in Japan, do not have typical trachoma but they should be treated, if efforts are being made to eliminate trachoma. Since the occurrence of trachoma depends not only on viral infection but also on unsanitary and dirty environments, both the patients and their families and the entire population of the village must be treated. Concentrated efforts to educate the people in sanitation, in addition to treating them, contributed to the remarkable results of mass treatment of trachoma.

THERAPEUTICS

A Preliminary Note on the Oral Treatment of Diabetes with N-(Sulfonyl-p-Methylbenzene) N'-n Butyl Urea or D 860 (A Product Free of Antibacterial Action). R. Moreau, R. Deuil, A. Sarrazin and others. Presse méd. 64:1261-1264 (July 7) 1956 (In French) [Paris, France].

The drug N-(sulfonyl-p-methylbenzene) N'-n butyl urea, or Tolbutamide (D 860), is the most recent among the hypoglycemia-inducing compounds orally effective in diabetic patients. In a group of 27 patients, 23 benefited from treatment by the drug. All except two were over 40 and nonemaciated. The patients were divided into two groups. The first group consisted of 14 patients who had never been given insulin. Nine of them obtained a perfect balance without any symptom of intolerance after two or more months of treatment. Three had an incomplete improvement. In the last two patients, one of whom had had diabetes for 21 years, treatment with Tolbutamide was a failure. The second group consisted of 13 patients who had previously been treated by insulin. Eight of these patients, who had received insulin for from two to four years, obtained a balance

at least equal to and sometimes superior to that resulting from insulin therapy. Three of the cases in the second group were particularly interesting, one because of the patient's age and two because of use of very large previous insulin doses. A 16-year-old girl successfully substituted 2 gm. of Tolbutamide for 15 units of insulin. Of two women over 60 years old, one had received 40 units of insulin daily for one year and the other had received 55 units for 11 years, and both successfully substituted Tolbutamide for insulin. The last two patients (one under age 40), who tried Tolbutamide unsuccessfully, were put back on insulin therapy after 48 hours because of a considerable quantity of ketone bodies in the urine.

Tolbutamide does not possess any NH_2 group in para position in its chemical structure. It has no obvious antibacterial action. This quality is an unquestionable advantage when the drug is to be used in a prolonged fashion. Tolbutamide shows a clinically demonstrated hypoglycemia-inducing potency. It is well tolerated, as evidenced by comparative biological tests that show no subsequent hematological, hepatic, or renal disturbances. Its prolonged administration does not cause any digestive disorders or any cutaneous eruption. Average and continued dosage should be 1 gm. in the morning and 1 gm. at noon. Hospitalization is advised for changing from insulin to Tolbutamide therapy. It seems preferable to diminish insulin gradually while carefully watching for ketosis or hypoglycemia. The latter is possible through the accumulation of the two medicaments. If ketosis appears, insulin should be taken again in the usual dosage. Tolbutamide may allow insulin dosage to be reduced in young patients with recent diabetes. The type of response to the drug may allow determination of the variety of diabetes in a patient. A long-term follow-up study will be the only means of ascertaining the innocuousness of the drug and its hitherto unknown mode of action. The possibility of treating diabetes without parenteral injections is an interesting development.

Mestinon (Pyridostigmine Bromide) in Myasthenia Gravis. H. Schwarz. Canad. M. A. J. 75:98-100 (July 15) 1956 [Toronto, Canada].

Pyridostigmine bromide (Mestinon) was given to 14 patients with myasthenia gravis. The drug is about five times less toxic than neostigmine bromide, and its effect on the intestines is only half as strong as that of the latter. It is an excellent curare antidote, but its decurarizing effect is quite independent of its inhibitory effect on the cholinesterases. Pyridostigmine proved to be more effective than neostigmine in seven patients because of its superior ability to control myasthenic phenomena and the absence of side-effects after prolonged use. In two of the seven patients, abrupt withdrawal of the drug and its replacement by neostigmine produced severe gastrointestinal upset, and in two others it caused a sudden exacerbation of myasthenia that could not be controlled with increasing amounts of neostigmine. Combined treatment with pyridostigmine and neostigmine in three patients was superior to treatment with either pyridostigmine or neostigmine alone. Two patients were unchanged, and in the remaining two patients the results obtained with pyridostigmine were inferior to those obtained with neostigmine. Sixty milligrams of pyridostigmine can be safely substituted for 15 mg. of neostigmine, although in patients responding well to the former this ratio is frequently much less. The patients were studied for one year, and at no time during this period was there any evidence of parasympathomimetic stimulation or cholinergic phenomena, even when high doses of pyridostigmine were given for long periods of time. Pyridostigmine, either alone or in combination with neostigmine, is the drug of choice in most patients with myasthenia gravis, because some patients resistant to prostigmine have shown an excellent response to pyridostigmine and because the drug appears to be relative nontoxic.

Prednisone and Acetylsalicylic Acid in the Treatment of Rheumatic Affections. A. Robecchi, V. Daneo and G. Marrazzi. Reumatismo 8:121-129 (May-June) 1956 (An Italian) [Turin, Italy].

Thirty patients with rheumatic affections were treated with a combination of prednisone and acetylsalicylic acid. The formula of the combination was prednisone 1 mg., acetylsalicylic acid 250 mg., ascorbic acid 50 mg., and aluminum hydroxide 200 mg. Ascorbic acid provides the vitamin C necessary in the treatment of chronic or acute rheumatism. Aluminum hydroxide prevents the gastric complications that acetylsalicylic acid or prednisone might cause. Of the 30 patients, 14 had rheumatoid fever, 6 arthrosis of the knee, 4 acute periarteritis of the shoulder, one a painful involvement of the shoulder joint, and 5 rheumatic infection. The minimal dose of prednisone able to maintain a certain clinical improvement and the erythrocyte sedimentation rate at law values was established. Treatment with the combination was started, and the dose of prednisone was cut down to one-third. The combination was given in divided doses from two to four times a day. Dietary restrictions were not imposed. Tolerance was perfect even in cases where the treatment lasted for many weeks. Some gastric disturbances were noticed at times, when very high doses were given. The results were as good as when prednisone or prednisolone are given alone. The effects were continuous; rheumatic symptoms regressed rapidly; biological tests tended toward normalization.

Cortisone in the Treatment of Some Liver Conditions. L. Aridroli. Riforma med. 70:708-712 (June 23) 1956 (In Italian) [Naples, Italy].

The author treated with cortisone five patients with various liver conditions: two had acute hepatitis, one had common cirrhosis, and two had posticteric cirrhosis. Three patients with acute hepatitis, two with common cirrhosis, and one with posticteric cirrhosis were kept as control cases and received the usual treatment without cortisone. Comparing the results obtained in the two groups, the author found that cortisone had a good general effect and a marked effect on the icterus. The regression of the icterus was speedy even in cases that could not have been cured with routine treatments. In three months' time the size of the spleen and of the liver decreased markedly. Patients did not receive any collateral treatment while they were being treated with cortisone. The use of cortisone seems particularly indicated for the treatment of acute hepatitis, especially in patients who can not be cured with common routine treatments. The next best results are obtained in patients with posticteric cirrhosis. By comparison, the effect of cortisone on common hepatitis does not seem to be pronounced. In all cases, however, the adrenal hormone succeeds in preventing progression of the condition.

The Epidemiology of an Erythromycin Resistant Staphylococcus. A. F. MacCabe and J. C. Gould. Scottish M. J. 1: 223-226 (July) 1956 [Glasgow, Scotland].

The development of resistance to antibiotics is accepted by many as an inevitable outcome of their use, and so there is a tendency to anticipate and hope that some new antibiotic will be discovered in time to deal with the resistant flora left behind by the previous one. This attitude is extremely dangerous, and, in the case of erythromycin, the problem of development of resistance is very serious. In Edinburgh the use of erythromycin has been largely restricted to a few hospital centers, and the bacteriologists have discouraged its indiscriminate use. Three important maxims have been followed in the use of erythromycin: 1. It has been used in modest amounts and as an oral or parenteral preparation, almost entirely for short-term therapy. 2. it has never been used for the treatment of trivial infections. 3. It has been used with the cooperation of the bacteriologist. Despite these precautions a Micrococcus (Staphylococcus) pyogenes that was resistant to erythromycin was isolated from a third degree burn of the buttock in a 9-year-old boy (patient A), who had never before been in hospital and had never had any infection. Moreover, he had never at any time been treated with erythromycin.

The micrococcus isolated from the burn of patient A was found to be resistant to penicillin, streptomycin, aureomycin, and terramycin but sensitive to chloramphenicol, and on preliminary examination was found to be resistant to 50 mcg. per milliter of erythromycin. No erythromycin was in use in this particular ward at this time, nor had been for the past six months; and none of the attendant staff had been treated with the antibiotic. The antibiotic sensitivity and bacteriophage susceptibility patterns of the micrococci isolated from the nose and wound of patient A were identical, and strains of the same phage pattern and antibiotic sensitivity were isolated from only one other source, namely patient B, who occupied the adjacent bed in the ward. The history of patient B revealed that he had spent several weeks in another

hospital earlier in the year in a ward where erythromycin had been used, and it is likely that he acquired the erythromycin-resistant strain at that time. It was impossible to treat these patients in isolation, but great care was taken to prevent further cross infection. Patient A was treated by the systemic administration of chloramphenicol, and his wound healed rapidly without further complications. The authors emphasize the fact that in order to limit the spread of erythromycin-resistant strains patients being treated with this antibiotic should be nursed in isolation, and there should be continual vigilance to detect erythromycin-resistant variants in patients and contacts, so that the appropriate action can be taken.

RADIOLOGY

The Results of Radiotherapy of Bronchial Cancer. L. H. Garland and M. A. Sisson. Radiology 67:48-62 (July) 1956 [Syracuse N. Y.].

Eighty-one patients with bronchogenic carcinoma admitted to the San Francisco Hospital and 41 patients with bronchogenic carcinoma in private practice were treated by roentgen therapy alone. Most of the patients received about 3,000 r throughout the tumor and its known or presumed regional nodes in about four weeks. In a small number of apparently favorable cases the plan was to deliver a potentially curative dose of about 5,000 r in four or five weeks, but this was not often accomplished. The technical factors were orthovoltage (200 or 250 kv.), with filtration to give a half-value layer of from 1 to 2 mm. copper; target-skin distances of 50 to 70 cm.; and skin fields of from 10 by 10 cm. to 20 by 20 cm., often irregular in shape to conform to the primary tumor and the enlarged nodes. Multiple small fields were used for radical doses and two or four larger fields for palliative or moderate doses.

The average survival time after treatment in the 122 patients was 6.2 months, the range being from 1 to 60 months. This average survival time was about three months longer than the average in a series of untreated patients. Relief of symptoms for a period of weeks or months was obtained in approximately two-thirds of the treated patients, but marked improvement occurred in only about 20% of the patients. Results were slightly better in patients with anaplastic tumors than in those with squamous-cell growths. The response to radiotherapy, however, was not predictable on histological grounds; some of the well-differentiated squamous-cell lesions responded better than some of the anaplastic tumors. Reports of megavoltage and betatron therapy to date suggest that the results of orthovoltage therapy for bronchial cancer, with use of the technique employed by the authors, are of about the same order of effectiveness. These facts would justify making greater use of generally available orthovoltage roentgen therapy in the care and treatment of patients with inoperable bronchogenic carcinoma today. Radiotherapy in moderately heavy dosage (about 3,000 r tumor dose in four weeks or less) has a useful place in the palliative treatment of bronchogenic carcinoma. In heavy doses (about 5,000 r tumor dose in four or five weeks), radiotherapy is occasionally curative. Patients in poor general condition or with distant metastases should not be subjected to radical radiotherapy. Palliative radiotherapy, however, judiciously applied, may often be of aid in these patients.

Comparative Evaluation of Radioactive Colloidal Gold and Nitrogen Mustard in the Treatment of Serous Effusions of Neoplastic Origin. F. J. Bonte, J. P. Storaasli and A. S. Weisberger. Radiology 67:63-66 (July) 1956 [Syracuse, N. Y.].

Twenty-two patients with serous thoracic effusion from tumors originating in the breast or ovary or from other tumors and 38 patients with ascites of malignant origin were treated by intracavitary instillation of radioactive colloidal gold. Results of this method of treatment were compared with those in 30 patients with neoplastic effusion of the pleural cavity and of 10 patients with malignant ascites treated by instillation of methyl-bis (beta-chloroethyl)-amine (HN2), a nitrogen mustard. Twelve patients with peritoneal or pleural effusions from tumors originating in the breast or ovary or from other tumors were given combined therapy with radioactive colloidal gold and nitrogen mustard. Thirty-seven of the 60 patients who received radioactive colloidal gold therapy were improved and 23 were therapeutic failures. Twenty-five of the 40 patients who received nitrogen mustard therapy were improved and 15 were therapeutic failures. Nitrogen mustard directly instilled into malignant effusions thus appeared to be of the same order of effectiveness as radioactive colloidal gold. The use of nitrogen mustard has several advantages over radioactive gold. It is easier to administer, it is more generally available, it is less expensive to the patient, and it presents no irradiation hazards either to nursing personnel or to those administering the treatment. The satisfactory results obtained with nitrogen mustard in the management of serous effusions of neoplastic origin encouraged the authors to employ nitrogen mustard first and radioactive gold second as a method of attack. The number of patients who received combined therapy with radioactive colloidal gold and nitrogen mustard is too small to permit definite conclusions; it has not yet been proved that the combined form of treatment has any additional advantage. In certain cases one substance may be successful when the other has failed.

Diabetic Charcot Joints. J. G. Bolen. Radiology 67:95-98 (July) 1956 [Syracuse, N. Y.].

Two cases of neuropathic changes in the joints of the foot (Charcot joints) associated with diabetes mellitus are described in a 39-year-old woman and a 43-year-old woman. The right leg was amputated at a point 6 in. below the knee in the younger patient, and a midthigh amputation was performed in the older patient. The causation of neuropathic joint changes in the feet of patients with diabetes mellitus is unknown, but theories regarding the origin of the condition include diminution of blood supply, peripheral neuritis, and extension to bone from a soft-tissue infection. The process usually begins after several years of poorly regulated diabetes. Early signs and symptoms include relatively painless swelling of the tarsometatarsal region with gradual eversion of the foot. The disease progresses slowly to partial or complete necrosis of the tarsal bones and obliteration of their normal joint relationship as revealed by radiographic studies in the two women. No specific treatment of the joint lesions in diabetes is efficacious. A review of the literature revealed that the condition was apparently arrested by lumbar sympathectomy in two patients. Some benefit from immobilization of the foot and ankle by orthopedic appliances to prevent weight-bearing and further deformity was also reported. To obviate the extreme difficulty of regulating diabetes mellitus in the presence of a chronic infection and to relieve pain and deformity, the affected extremity is often amputated, as in the author's patients.

Splenoportography for the Diagnosis of Portal Hypertension. J. M. Falomir, M. Campuzano and B. Sepúlveda. A. M. A. Arch. Int. Med. 98:39-43 (July) 1956 [Chicago].

Percutaneous splenoportography according to Abeatici and Campi's technique was performed in 11 patients with portal hypertension associated with esophageal varices and splenomegaly. Thirty cubic centimeters of 70% iodopyracet (Diodrast) was injected by splenic puncture. No serious accidents were observed. The chief usefulness of the method lies in its ability to supply the following information: (1) confirmation of the existence of portal hypertension; (2) localization of the site of obstruction, thus helping to make possible a differential diagnosis between portal hypertension caused by intrahepatic obstruction (cirrhosis) and that caused by an extrahepatic block; and (3) demonstration of anomalies such as a fibrotic portal vein (which, in addition to being the cause of the hypertension, makes the vessel unfit for a portacaval anastomosis) or the formation of the splenic vein by two veins that go almost to the middle line, making it unfit for splenorenal anastomosis.

Hepatic Duct Carcinoma Seventeen Years After Injection of Thorium Dioxide. J. C. Roberts and K. E. Carlson. A. M. A. Arch. Path. 62:1-7 (July) 1956 [Chicago].

Thorotrast, a stabilized emulsion of thorium dioxide, has been widely used as a contrast medium for radiography. It is radioactive and is retained indefinitely in the reticuloendothelial system. Recent reports indicate that the combination of radioactivity and indefinite retention may lead to necrosis and fibrosis at injection sites, to hemopoietic disturbances, and to the formation

of neoplasms. The authors present the history of a 45-year-old woman in whom carcinoma of the hepatic duct developed 17 years after intravascular injection of thorium dioxide into an extremity for demonstration of a peripheral vascular abnormality. Although no direct cause-and-effect relationship can be proved, thorium dioxide was extremely prominent in the portal lymph nodes and in the portal aspect of the liver. The presence of thorium dioxide was diagnosed before death by an abdominal roentgenogram and proved after death by spectrochemistry. Radioactivity was demonstrated by gamma-counting and autoradiographs. The estimate of the quantity of thorium dioxide retained, based on calculations of the amount found at autopsy in the liver, lymph nodes, and spleen, is in remarkable agreement with the usual dosage for peripheral vasculography.

Fatal Pulmonary Insufficiency Due to Radiation Effect upon the Lung. D. J. Stone, M. J. Schwartz and R. A. Green. Am. J. Med. 21:211-226 (Aug.) 1956 [New York].

Five men between the ages of 22 and 61 years, two with bronchial carcinoma and one each with metastatic testicular embryonal carcinoma involving a portion of the anterior segment of the right upper lobe and adjacent mediastinum, a large mediastinal mass caused by Hodgkin's disease, and mediastinal metastasis from seminoma, were given irradiation treatment. The first three patients received one irradiation course with a total depth dose of 4,100, 6,000, and 3,200 r respectively. Of the two remaining patients, one received three and the other five courses of irradiation therapy; the total depth doses administered to the first of these two patients were 4,477, 1,800, and 2,000 r, and those administered to the second patient were 2,700, 2,714, 3,135, 2,064, and 2,000 r. Radiation pneumonitis and fibrosis leading to severe pulmonary insufficiency occurred in all five patients. In the first and in the third patients the fatal syndrome occurred after 4,100 and 3,200 r respectively were given within two weeks, a relatively short period. The second patient was given the much larger dose of 6,000 r over a period of 40 days before pulmonary fibrosis occurred. One may, therefore, relate the individual development of pulmonary fibrosis to the volume of lung exposed, the total depth irradiation, and the rapidity with which this total depth irradiation is given. The occurrence of cumulative effects of radiation is suggested by the observation that in the two patients who received multiple courses of irradiation therapy the previous courses were not associated with clinical manifestations, although pathological changes in the lung may have been produced, and that it was only after the multiple courses that the clinical picture of irradiation reaction developed. Correlated clinical, functional, and pathological findings indicated that impaired diffusion across the alveolar-capillary membrane played an important role in the functional abnormality in each patient. Steroid therapy with hydrocortisone, corticotropin (ACTH), prednisone, and prednisolone, utilized in four patients, failed to alter the course of the acute syndrome. The irradiation therapy given to the patients conformed to modern standard practice. This practice should now be reviewed in the light of the technical improvements that make possible delivery of more intensive irradiation to a more restricted area in depth in shorter periods, at the risk, however, of increasing irradiation fibrosis in a larger proportion of treated patients.

PHYSIOLOGY

The Pathogenesis of Sodium Retention in Congestive Heart Failure. A. C. Barger. Metabolism 5:480-489 (July) 1956 [New York].

The various stages in the progression of heart disease can be duplicated in the laboratory by the production in dogs of discrete, right-sided cardiac valvular lesions of increasing severity. These surgical operations result in alterations in cardiac function that can be graded from mild to severe and that are stable over periods of months. Recent observations in man and dog indicate that alterations in sodium metabolism occur very early in heart disease, even before a significant change in resting venous pressure. At such a stage of cardiac incompetence there is usually a fall in renal plasma flow and only occasionally a decrease in glomerular filtration rate. The findings in such patients are similar to those observed in normal persons with imposed circulatory stress and raise the question of the possible role of baroreceptors in the reflex regulation of sodium balance. Even with such minor degrees of cardiac incompetence, mild exercise further decreases the renal plasma flow, lowers the glomerular filtration rate, and is accompanied by a retention of salt and water.

As the clinical condition deteriorates and the resting venous pressure begins to rise, exercise produces an increasingly greater elevation of venous pressure. Such an acute elevation of venous pressure leads to sequestration of blood in the venous system and excessive filtration from the capillary bed. Since the lymphatics may, at this stage of the disease, be transporting fluid at a maximum rate, the increased filtration may not be accompanied by an increase in lymph return. With the elevation of pressure in the venous system during exercise, lymph return must be further impaired, resulting in a significant decrease in "effective circulating blood volume." Such fluid dislocation further enhances sodium retention. The glomerular filtration rate may still be normal, however, even when overt failure is present, with ascites and edema. Nevertheless, the retention of sodium introduced directly into the renal artery of dogs in failure is evidence for increased tubular reabsorption of sodium at this stage of the disease. It is important to the understanding of the pathogenesis of congestive heart failure to know whether the excessive secretion of aldosterone precedes the overt failure or is apparent only in the later stages of decompensation. With the progressive deterioration of the clinical condition of the patient and the development of anorexia and cachexia, profound alterations in renal hemodynamics ensue, further impairing the ability to excrete sodium and water. Only with an analysis of the multiple factors that are altered in the natural progression of the disease can the relative importance of these various factors in the pathogenesis of sodium retention be determined.

A Manual Method of Artificial Respiration for the Simultaneous Resuscitation of Two Victims. A. L. Bennett, L. H. Jodrey, J. Christensen and M. M. Mehring. J. Appl. Physiol. 8:603-607 (May) 1956 [Washington, D. C.].

"How can one person most effectively give artificial respiration to two victims?" To answer this question the efficacy of the Holger-Nielsen method for simultaneous induction of respiration in two victims was compared with that of two standard single methods. When the Holger-Nielsen method is applied to two victims, they are placed close together in the prone position. Their adjacent arms are extended straight beyond their heads. The outer two arms are bent so that, with faces turned outward, each head may rest at the temple on the back of a hand. The operator kneels astride the two outstretched arms and close to the two heads. He puts on pressure by placing a hand between the shoulder blades on each back while rocking forward on his knees. He then grasps the outer two elbows and pulls as he rocks backward. After the pull, the elbows are dropped and pressure is again applied to complete the cycle, which is repeated 12 times a minute. Forty volunteers were tested for use as subjects. Not all subjects proved able to permit entirely passive respiration. Such subjects were eliminated in preliminary tests. A total pressure of 40 lb. per subject was used. An audible time signal at 5-second intervals made it possible for the operator to maintain a uniform rate of 12 cpm for each method tested. Oxygen consumption of the operator was measured and his tidal exchange recorded by having him breathe in a closed system.

The results obtained on selected subjects were shown to be valid in terms of a comparison with tests made by others on unconscious subjects. The Holger-Nielsen method was found to be 96% more efficient than the Schafer method in terms of tidal volume exchanged, while it required 18% more effort in terms of maximum rate of oxygen consumption during work. The double Holger-Nielsen method, compared with the Schafer method in the same way, was 74% more efficient at a cost of 64% more work. The double method is so nearly equal to the single Holger-Nielsen method in its effect on tidal exchange that in case there were two operators available for the resuscitation of two victims there would be justification for the use of the double method to allow periodic relief of the operators and, more important, the freedom of one to keep airways open and to seek help.

BOOK REVIEWS

Progress in Neurobiology: I. Neurochemistry. Edited by Saul R. Korey, M.D., Professor of Neurology, Albert Einstein College of Medicine of Yeshiva University, New York, and John I. Nurnberger, M.D., Research Associate, Institute of Living, Hartford, Conn. With 23 contributors. Cloth. $6.75. Pp. 244, with 29 illustrations. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1956.

This work is the first of a series of three projected volumes on neurobiology, a relatively new field of study that is advancing with ever-increasing impetus and accumulating a great variety of facts at nearly all levels of instrumental observation. The aid of practically every modern scientific device or technique of biological investigation is being sought to elucidate the biochemical and biophysical processes of the brain. This book attempts to present as up-to-the-minute a review as possible of the many-sided investigations in neurochemistry, including current work in the laboratories of the various contributors. This adds a sense of immediacy and tentativeness that is so often lacking in review articles, which sometimes give a false impression of established fact. Another aim of the series is to bring together the work of these investigators in the hope that a pooling of their ideas will result in fruitful concepts based on the evolvement of speculations spawned by the processes of correlation and interrelationship. And it is precisely here that the weakest link in this field exists. The range of the papers is wide—from enzymatic thioltransacetylations to the structure of ribonucleic acid, from cerebral copper proteins to adaptive enzyme formation, and from chemical changes in the postnatal development of the rat brain to the neurochemistry of seizures.

The reader may feel at times that he is in the midst of a scientific free-for-all. Aside from the fact that this is generally the case when spadework is being done in a new field, it is in part also due to the inclusion of papers that might properly belong elsewhere. For example, a paper on the electron microscopic studies of the neuron more properly belongs in a volume on the ultramicroscopic morphology and cytochemistry of the nervous system. On the whole the reviews fulfill their aim in keeping the reader abreast of this expanding field, and, therefore, this book admirably serves a vital function. It is a sad commentary on the state of our specialization in the biological sciences to note that practically all the investigators are either biochemists or neurologists, with no representation by those whose daily work consists of the study of the mind. It is exactly this cleavage that precludes the formation of integrated concepts spanning from the chemical through the symbolic and behavioral spheres, which would provide for the selection of foci of investigation and experimental design that would give depth to the understanding of mental functioning. Despite the general recognition of this incongruity, the lines remain sharply drawn between those who explore the chemistry of the brain and those who study psychology.

The Nature of Viruses and the Origin of Life. By Hideo Moriyama. Cloth. $7. Pp. 454, with 40 illustrations. Shonan Hygiene Institute, Kamakura; sole agency: Igaku-Shoin Company, Ltd., 20, Hongo-6, Bunkyo-ku, Tokyo, Japan, 1955.

The author's purpose is to expound a theory by which all the life phenomena might be explained most simply. His theory is founded on the numerous facts that he claims to have discovered and has been advanced by the "researches carried out by other workers." He lists 654 references, including about 30 to his own publications, few of which are less than 15 years old. There is no indication in the book or on its jacket as to the author's academic qualifications or background. The book is arranged in five parts, with a long summary and a list of references at the end of each. Some of the chapter headings are The Key to Solving the Riddle of Life, The Infection of Denaturation, Propagation of Transnaturation in Protoplasm by Viruses, Eczema or Allergic Dermatitis, The Origin of Sexual Reproduction, The Theory of Memory, and The Faculty of Protein to Memorize Its Structure. The author's interests include entomology, blood clotting and hemolysis, virology, genetics, bacteriology, oncology, epidemiology, endocrinology, chemistry, physiology, and cortisone therapy. These indicate the range of subjects dealt with to solve the riddle of life.

Many of the author's opinions, observations, and statements are questionable or confusing. Examples of such are statements that sapotoxin injected intradermally gave rise to virus particles (p. 8), and similar particles were found in erythrocytes (p. 82) and crushed castor beans (p. 226); bacteriophage in chicken feces originates in the chicken itself (p. 129); and protein denaturation is generally infectious. He states that viruses and life in general originated in the primordial ocean ooze that contained globulin-like protein; this protein united with precipitated lipids to form elementary bodies and protoplasm endowed with assimilase. Evidently the author had spontaneous generation in mind. Many statements are eyebrow raisers: "Mankind seems to have begun to make a dash at the fate of extermination—because of rapidly developing orthogenesis" (p. 427). "The tubercle bacillus is an inheritable pattern of the gene in the majority of human beings" (p. 278). "Life may be nothing but the manifestation of the function of assimilase" (p. 286). The book shows how an author can review vast fields of science, select the matter he wants, add a few personal observations, and weave facts and notions into a hypothesis. There are numerous tables, well-drawn charts and diagrams, and a few unclear photomicrographs. At times, sentences must be reread because of numerous misspellings and minor lapses of English, for which the author apologizes in the preface.

Outline of Orthopaedics. By John Crawford Adams, M.D., F.R.C.S., Consultant Orthopaedic Surgeon, St. Mary's Hospital, London, England. Cloth. $7. Pp. 423, with 299 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, Scotland, 1956.

This is one of several condensed textbooks on orthopedics published in the last two to three years; each new book seems to be a definite improvement on the previous one. This book is compact, and the descriptions of the various orthopedic disabilities, though brief, are adequate. Discussions of treatment are minimized. In a book of this type that is a good thing, because treatment may be so varied, so expensive, or so debatable that discussion of it would take up many pages. The author gives his views on treatment briefly, and, if the reader is interested, he may look up the details elsewhere. The arrangement of material is excellent, particularly the part on the descriptions of regions. The author takes up the cause, pathological changes, clinical features, course, prognosis, and treatment of each condition described. The roentgenographic reproductions are uniformly good, and the line drawings ably illustrate the various conditions dealt with. The size of the book makes it easy to handle, and the printing is large enough to be easily read. This book can be recommended to medical students, interns, and residents. It would also be an excellent book for the orthopedist to have on his desk, because the line drawings would help him to explain to patients or their parents the underlying condition of the ailment they have.

A Clinical, Pathological, and Genetic Study of Multiple Neurofibromatosis. By Frank W. Crowe, M.D., William J. Schull, Ph.D., and James V. Neel, M.D., Ph.D. Publication number 281, American Lecture Series, monograph in Bannerstone Division of American Lectures in Dermatology. Edited by Arthur C. Curtis, M.D., Chairman, Department of Dermatology and Syphilology, University of Michigan, Ann Arbor. This study was supported by Contract AT (11-1)-70 from United States Atomic Energy Commission. Cloth. $5. Pp. 181, with 15 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1956.

This monograph on neurofibromatosis from the Hereditary Clinic of the Institute of Human Biology, University of Michigan, was written by a dermatologist in collaboration with two geneticists. It presents the conclusions reached by a study undertaken in an effort to develop a representative picture of the

clinical and genetic aspects of a relatively rare disease with protean manifestations. The material on which the monograph is based consists of 227 patients seen at the University of Michigan Hospital during the years 1934 to 1950. For the purposes of this study the patients were interviewed by a trained field worker and a tentative pedigree was drawn up as a basis for planning physician contacts with other members of the family. Affected persons were given a complete cutaneous examination, and a detailed medical and personal history was obtained. Whenever feasible, the patients and as many members of the family as possible were brought to the hospital for more thorough study, including roentgenologic surveys, psychometric examinations, consultations with members of other departments, and diagnostic biopsies. The presentation of the case material is made in a clear and concise manner. The discussion of the cutaneous, osseous, and genetic aspects is especially good. There are a number of excellent illustrations of the pigmented cutaneous lesions, cutaneous tumors, and bone lesions. In addition, there are figures and tables that give a thorough analysis of the genetic factors. There is a brief but adequate bibliography and an index. The book is authoritative and clearly written and covers the subject well. It is worth the study of all physicians and should be in the library of every dermatologist, roentgenologist, neurologist, and geneticist.

Cerebral Palsy: Advances in Understanding and Care. By Viola E. Cardwell, R.N., P.T., M.A. Cloth. $5. Pp. 625, with 81 illustrations. Association for Aid of Crippled Children, 345 East 46th St., New York 17, 1956.

There has long been a need for an authoritative textbook in the field of cerebral palsy. Because so many specialties, including pediatrics, neurology, physical medicine, orthopedics, ophthalmology, and psychiatry, as well as such ancillary specialties as speech, psychology, and education, are involved, no single person is qualified to cover the entire subject. The present volume has successfully brought together many opinions, observations, and suggestions on the diagnosis of cerebral palsy and the management of children with the disease. In this respect, the book is up-to-date and comprehensive. It is divided into three sections: one dealing with the general aspects of the problem, particularly the diagnostic facets; one with the treatment and management of the individual patient; and one with the community aspects of the disease. The appendixes are valuable, giving the sources of supply of specialized equipment, lists of organizations interested in the problem, and an extensive bibliography. The text is illustrated with pictures clearly showing various types of equipment and their use. The author has maintained an objective viewpoint in compiling materials from various sources, but, because the book is a compilation, it falls short of the goal of evaluating the various types of treatment described. As might be expected, it contains conflicting statements, thus reflecting its varied sources. Although not suitable as a textbook, it is, nevertheless, a valuable source book, and it should be especially useful for educators, nurses, physical and occupational therapy students, and professional nonmedical workers in the field of cerebral palsy.

Biochemistry of the Eye. By Antoinette Pirie, M.A., Ph.D., and Ruth Van Heyningen, M.A., D.Phil. Cloth. $7. Pp. 323, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1956.

The purpose of the book is to encourage the use of the tissues of the eye in experimental biochemistry, so that the knowledge of the normal and abnormal eye may be enhanced. The volume is divided into 10 chapters, the first 4 of which are concerned with the lens, the tissue that has been more thoroughly investigated than any other tissue of the eye. Three of these four chapters discuss the composition of the lens, its metabolism, and the transport of substances into it; the other is on experimental and senile cataracts. Several chapters treat the composition and metabolism of the cornea, retina, aqueous humour and ciliary body, and vitreous humour and the chemical aspects of vision. A final chapter discusses the effects on the eye of nutritional deficiences. The book should be of interest to ophthalmologists and biochemists who have done work on the eye or who contemplate going into the field. This relatively small volume is not intended to be a complete treatise on the eye or even to include all that is known on the biochemical processes of the eye. It does include, however, most of the fruitful work that has been done on ocular biochemistry and indicates the large amount of work still to be done. The volume contains an index and a bibliography at the end of each chapter.

Gynecologic Cancer. By James A. Corscaden, Ph.B., M.D., Attending Gynecologist, Sloane Hospital for Women, New York. Second edition. Cloth. $10. Pp. 546, with 116 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1956.

This second edition is essentially a reference book written from the point of view of a clinician and stressing the author's personal conclusions. It presents well the American attitude toward the problems of pelvic cancer in women and reviews the English-language literature dealing with them. Cervical tumors and endometrial cancers are exhaustively discussed, but some of the rarer tumors, such as chorioepithelioma and vulvar tumors, are incompletely described. This is probably the best summary in the American literature of the clinical problems of gynecologic malignant disease, but it lacks an authoritative histological approach. In fact, the author deprecates pathologists in general and states that one must know his pathologist to interpret reports. The details of the problems that the pathologist must face are given scant attention. It is, however, primarily a clinician's report and as such carries the unquestioned authority of the author. The book is well printed on glossy paper and has good illustrations and an adequate index. The references to the literature at the end of each chapter are useful but are largely from English-language sources and refer mostly to clinical reports. This is an excellent book for the clinician, and its wide use should add much to the efficiency of care given to women with pelvic cancer.

Galen on Anatomical Procedures: De Anatomicis Administrationibus. Translation of surviving books with introduction and notes by Charles Singer. Publications of Wellcome Historical Medical Museum, new series, no. 7. Cloth. $8.75; 37s.6d. Pp. 280. Published for Wellcome Medical Museum by Oxford University Press, 114 Fifth Ave., New York 11; Amen House, Warwick Sq., London, E.C.4, England, 1956.

A classic in medical history is here made available in remarkably interesting form. It is a classic in the sense that it can be depended on to furnish instruction, pleasure, and occasional surprises to future generations as it has to past generations. It contains some vivid accounts of the successes and failures of surgeons between 129 and 198 A. D. It also contains details of fundamental experiments in the physiology of such structures as the phrenic nerves and the diaphragm as well as the results of innumerable dissections, especially of apes. An unusual feature of this edition is the set of illustrations by Kopel on the anatomy of the rhesus money; these facilitate the understanding of Galen's text. Except for his rather personal and belligerent manner, Galen sounds quite modern. His odd mixture of boastfulness and reticence suggests that the problems of anatomists and physiologists in his time were much like those of their modern counterparts. The notes and index are excellent. The book is recommended.

World Atlas of Epidemic Diseases: Second Part in 4 Issues: Second-Fourth Issues. Edited under sponsorship of Heidelberg Akademie der Wissenschaften, by Professor Dr. med. Ernst Rodenwaldt. Assistant scientific editor: Privatdozent Dr. med. habil. Helmut J. Jusatz. In collaboration with Prof. Dr. R. E. Bader, and others. [In German and in English.] Paper, loose-leaf. Various pagination, with 10 maps, 9 maps; 11 maps. Falk-Verlag, Burchardstrasse 8, Hamburg 1, Germany, 1954-1956.

The publication of this monumental work, started in 1954, has been completed. Part 1 and the first issue of part 2 (published in four issues) have already been reviewed in THE JOURNAL (May 9, 1953, page 197, and Feb. 19, 1955, page 690). The maps and text of part 2 were not issued in sequence, but, since they are perforated for inclusion in a loose-leaf binder and since the pages are numbered, they can now be assembled in the order in which they appear in the table of contents. Those who have the earlier issues should be pleased to be able to complete their collection. It is hoped that the loose-leaf format means that as certain maps become obsolete with improvements in methods of disease prevention they will be brought up-to-date and made available as replacements.

QUERIES AND MINOR NOTES

DOG BITES

To the Editor:—*What are the responsibilities of the physician, local authorities, and family in regard to dog bites when (1) the dog is a friendly neighbor's and (2) the dog is unknown and has disappeared? Is the physician obligated to give the rabies vaccine series if the dog is not found? If it was decided by the physician that the unknown dog was not rabid and/or the bite was only an abrasion and later the person died of rabies, is the physician liable? Is the mortality and morbidity from the vaccine significant enough to act as a deterrent when the dog cannot be found?*

William G. Thomas, M.D., Sycamore, Ill.

Answer.—Rabies control laws differ in the various states and cities. Whether the dog is owned by a friendly neighbor or by a stranger, the law should be adhered to strictly. Most rabies laws include the statement that it is unlawful for any person having knowledge that a person has been bitten by a dog to refuse to report such an occurrence promptly to the rabies inspector and/or local health authority. This obligation is equally binding on the physician, the family, and the local authorities. The physician must decide on the basis of the history and clinical findings, as well as his own judgment, whether to administer rabies vaccine. If the dog is not found and if the bite has penetrated the skin, the physician should administer antirabies vaccine unless there is some very unusual circumstance involved. A physician's liability for malpractice is very difficult to define, since there may be many extenuating circumstances in addition to the physician's own judgment of a case. Neurological complications after administration of antirabies vaccine occur in a ratio of from 1 to 2,000, to 1 to 7,000 (International Rabies Conference, Paris, 1927; Appelbaum and others: *J. A. M. A.* 151:188 [Jan. 17] 1953; Transcript of Proceedings, Oklahoma Academy of General Practice, Oklahoma City, Feb. 18, 1953, p. 34). Therefore the appearance of neurological complications is not sufficiently frequent to act as a deterrent in the administration of rabies vaccine.

POLLEN AND ROOM AIR CONDITIONERS

To the Editor:—*Is there any scientific evidence for the claims that a room air conditioner can effectively filtrate pollens?*

M.D., Massachusetts.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—Many tests have been run with room air conditioners. Three general types are available, a room window filter, a combined filter with cooler, and the precipitator or the combined filter-precipitator type. All of them remove pollen from the air to a greater or lesser extent, the precipitator type being the most efficient. The question of effectiveness is relative. Patients with hay fever whose symptoms improve when exposed to half the normal amount of pollen will improve with the least efficient of the filters. Those who are extremely sensitive may respond only to the most efficient apparatus. The relief will also depend on the habits of the individual and on the amount of time spent in the conditioned room. Those who have pollen asthma do not have as good a response as those who have nasal symptoms only.

Answer.—Conventional room air conditioners, equipped with fibrous filters, will remove only the larger pollens from the air. Special cloth filters, or electronic precipitators, must be used to remove all but the smallest pollens for the treatment of pollen asthma. Millipore filters will remove all pollens, but require too much power to force the air through.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any medical or other organization unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

ASTHMA COMPLICATING MYOCARDIAL INFARCTION

To the Editor:—*A 67-year-old man had, as his chief complaint, severe dyspnea. He had been treated by another physician for asthma, which had its onset about six months ago. The treatment used is not known. The patient was having most difficulty in the expiratory phase of respiration and was coughing intermittently, with the production of thick greyish sputum; there were no specific complaints referable to the gastrointestinal, genitourinary, or nervous systems. He did complain of a peculiar sensation substernally. He was fairly well developed, fairly well nourished, and of small stature, and he appeared to be acutely ill. Pulse rate was 120 per minute, equal and regular. Blood pressure of the left arm, propped position, was 92/70 mm. Hg. Cyanosis of the lips was present. The neck veins were not distended in the propped position. There was a marked increase in the anterior-posterior diameter of the chest. Percussion and palpation were nondiagnostic. Auscultation revealed predominantly expiratory dry musical rales throughout, and it was felt that severe bronchospasm was present. There were no crepitant rales. Sinus tachycardia was present. No peripheral edema was present. An electrocardiogram showed an extensive myocardial infarction of the anterior wall. The diagnosis was (1) bronchial asthma, severe, intractable, and (2) myocardial infarction, acute. The asthma did not respond to bronchodilators, expectorants, sedation, and oxygen. Please answer the following questions: 1. Should corticotropin (ACTH) and the corticosteroids be used as therapy for the intractable asthma, or are these contraindicated in view of the extensive myocardial infarction? 2. Since it was felt that the patient would die of anoxia unless the bronchospasm were relieved, the therapy of the asthma was extremely important. If the steroids are contraindicated, what therapy should be used? 3. If steroids are used, should anticoagulants be used also as part of the treatment of the myocardial infarction, or should they be withheld because of the already altered clotting mechanism, as a result of the steroids?*

M.D., Illinois.

Answer.—In a patient whose myocardium is seriously damaged by infarction, severe diffuse airway obstruction (due to edema, secretions, or bronchospasm) may well be lethal, because of the resultant marked increase in the muscular work of breathing, hypoxia, and possible hypercapnia. Hypoxia not only may lead to an increase in the extent of the infarction but also may predispose to dangerous arrhythmias, such as ventricular tachycardia or ventricular fibrillation. The use of corticotropin or the corticosteroids is definitely indicated to relieve the diffuse airway obstruction, particularly if other therapy is found not to be immediately effective. However, these other measures should not be discontinued when corticotropin or corticosteroid therapy is initiated. Thus, antibiotics, bronchodilators, and sputum liquifiers should be administered by the appropriate routes. Oxygen therapy is essential in such a patient. However, if this patient has had chronic diffuse obstructive emphysema of long standing, with carbon dioxide retention, there is a danger of depression of respiration by the administration of high concentrations of oxygen, since the respiratory center in such a patient is relatively unresponsive to either increased partial pressure of carbon dioxide or increased hydrogen ion concentration in the arterial blood. Nevertheless, oxygen should still be given, but in lower concentrations, intermittently, well humidified, and while the patient is under constant observation by a physician. Control of the oxygen therapy will depend on its observed effect on the frequency and depth of respiration, the clinical appearance of the patient, and, whenever possible, blood gas determinations. Peptic ulcer (gastric or duodenal) occurs much more frequently in patients with chronic diffuse obstructive emphysema than in the general population. It may be present in the absence of symptoms. For this reason, the prescription of an ulcer regimen (diet and antacids) will be advisable if corticotropin or corticosteroids are used. Because of the increased incidence of peptic ulcer in these patients, the use of anticoagulants will perhaps be

associated with a slightly greater risk than in a patient without chronic obstructive emphysema. However, if the indication for their use is present, they may be given if daily prothrombin determinations are available. The selection of antibiotics and the control of the bronchopulmonary infection, which are especially important if corticotropin or corticosteroids are used, will depend on bacteriological studies of the sputum. Salt restriction and the administration of potassium will depend on the type of steroid employed and the duration of its administration.

SEBORRHEIC DERMATITIS

To the Editor:—*I frequently see cases of bilateral axillary dermatitis, usually negative for evidence of fungi. There is usually no other area of dermatitis on the body. Deodorants, of course, have been excluded, as well as soaps. I presume that the usual diagnosis is seborrheic dermatitis. At least 60 to 75% of these people are rather nervous. What is the usual treatment for this condition?*

M.D., Alabama.

Answer.—The treatment must be appropriate to the diagnosis. The axillary spaces are not uncommon sites for seborrheic dermatitis, but usually other favored parts are involved first or concomitantly, such as scalp, retroauricular and nasolabial folds, eyebrows, and sternum. Other folds, too, may be involved, such as the inguinal and in the umbilicus. If none of these other parts is affected, then it might be well to consider other diagnoses. Dermatitis venenata from rubber dress shields, materials used by tailors in building up the armholes of coats, and toilet waters should be considered. Erythrasma is a fungous infection imparting a reddish appearance to the armpits. The causative organism, the Actinomyces minutissimus (Microsporon minutissimum), cannot be cultured and is difficult to demonstrate.

If the correct diagnosis is seborrheic dermatitis, then 3 to 5% sulfur and 2 to 3% salicylic acid in a water-washable base make a reliable remedy. In some cases antibiotic creams with bacitracin and neomycin are more effective. Monilial infections, so common in folds, may yield to nystatin ointment or lotion. A fresh effort should be made to uncover a cryptogenic cause of a possible dermatitis venenata and do away with it if found.

MULTIPLE-DOSE VIALS OF MEDICINES

To the Editor:—*How long should one attempt to use multiple-dose vials of medicines? We use Demerol and morphine rarely, and yet we have 25-or-30-cc. vials of these drugs, which were in stock before I came here. We also have large vials of procaine. These would last three or four years if we were to use them all. How should we dispose of narcotic preparations of this sort if it should be necessary?*

M.D., Ohio.

Answer.—The chief objection to the use of large multiple-dose vials of various medicines is the possibility of contamination from repeated withdrawals of individual doses or from failure of the seals. For this reason, large vials are not desirable in a situation in which small doses are withdrawn infrequently. It is recommended that the large vials be disposed of and replaced with hypodermic tablets or with small single-dose ampuls. The morphine and Demerol solutions could be disposed of by shipping them to the federal district narcotic supervisor. For details of this procedure consult Article 196, Regulations no. 5, issued by the U. S. Treasury Department, Bureau of Narcotics. This procedure is not required in the case of procaine, which does not come under the federal narcotic law. The Ohio state narcotic law should also be consulted.

BOXING

To the Editor:—*In Queries and Minor Notes, in the June 23, 1956, issue of* The Journal, *page 770, the question is raised whether a list is available "of physical standards recommended for individuals who participate in boxing matches." The consultant answered, in effect, that the usual medical requirements are general in nature and that details are left to the examiner. He concedes that a person who has no vision in one eye should not be allowed to box because his ability to defend himself would be impaired and also because of the possibility of loss of vision in the remaining eye. I take a more radical view. Boshoff and I, in an article "Boxing Injuries of the Eyes" (A. M. A. Arch. Ophth. 39:643-644 [May] 1948) presented case histories of boxers previously healthy who suffered tears in the iris, with hyphema, cyclodialysis, traumatic choroiditis followed by detachment of the retina, choroidal tears near the fundus, extensive hemorrhages in the vitreous body, widespread macular changes, and rupture of the lamina elastica posterior (Descemet's membrane), resulting in keratoconus and corneal scarring. Doggart (Impact of Boxing on Visual Apparatus, A. M. A. Arch. Ophth. 54:161-169 [Aug.] 1955) has corroborated these findings. None of these injuries are accidental in the strict sense of the term. They were deliberately produced, since blows to the face are the prescribed means used in boxing. That these blows do not always succeed in causing damage to the eyes or, more frequently still, to the brain is irrelevant for the evaluation of the nature of these injuries. Recent neurological and electroencephalographic surveys have disproved the assertion that clinical and electroencephalographic abnormalities due to boxing are infrequent. Undoubtedly, the same statement holds good for injuries to the eyes. Thus, "the possibility of loss of vision," which the consultant mentions as a reason to debar a person from participating in boxing if he is blind in one eye, must be considered a danger to everybody who exposes himself to the vicissitudes of a fight whether he has suffered a previous eye injury or not. The fact that no list is available of medical standards recommended for participants in boxing cannot absolve physicians from their responsibility when they are called on to advise patients in connection with boxing. The medical view must be that boxing is taboo, since it is the aim in this "sport" to assault the opponent and to disable him by inflicting serious injury. It is this fact that distinguishes boxing from such activities as track and field sports, tennis, swimming, games, weight-lifting, and gymnastics. A former British cabinet minister, Edith Summerskill, has given an excellent review of the problem in its medical, social, and ethical aspects in a book that has just come off the press (The Ignoble Art, London, William Heinemann, Ltd., 1956).*

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SENSITIVITY TO RUBBER GLOVES

To the Editor:—*In the June 30, 1956, issue of* The Journal, *page 931, there is a query concerning sensitivity to rubber gloves. I have a similar allergy and wish to pass on some information that may possibly be of help. 1. Neoprene gloves or any other nonallergic gloves, when autoclaved along with other rubber or latex gloves or materials, will gradually assume their allergic properties. These gloves must be autoclaved separately. 2. Neoprene does seem to become more flexible, and possibly thinner, after frequent autoclaving. 3. The B. F. Goodrich Company, Akron, Ohio, puts out "special purpose" nonallergic gloves that answer the allergic problem but are extremely thin and tear easily. They last through one or two operations. Gloves should be autoclaved separately in order to maintain their nonallergic properties.*

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INFECTIONS DUE TO MIMA ORGANISMS

To the Editor:—*In* The Journal, *March 31, 1956, page 1183, in Queries and Minor Notes, a doctor from Connecticut asks whether the pathogenicity of Mima organisms has been limited to causing vaginitis and conjunctivitis. An article by Townsend, Hersey, and me in the May, 1954, issue of the* United States Armed Forces Medical Journal *(5:673) on this subject may be of some general interest as we reported two cases of infection with Mima polymorpha as a causative agent in epidemic cerebral meningitis (Waterhouse-Friderichsen syndrome), one with autopsy findings and one with recovery.*

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